

A SOCIAL WORK INVESTIGATION INTO ENVIRONMENTAL INJUSTICE IN A LOW SOCIOECONOMIC SETTLEMENT: THE EXPERIENCES OF RESIDENTS

by

IZELLE ALMERIE DU PISANIE



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Supervisor: Professor Sulina Green

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Summary

Environmental injustice is a global phenomenon that entails the unequal distribution of environmental resources as well as disproportionate exposure to environmental hazards. Invariably, low socioeconomic populations carry a higher burden of negative environmental conditions such as pollution and vulnerability to natural dangers, while having less access to environmental resources such as vegetation, public parks, and adequate infrastructure. The case is no different in South Africa, where unequal and oppressive environments were deliberately created under apartheid governance, and of which the effects persist to this day.

The Social Work profession emphasises the importance of considering the person in their environment, yet there is very little empirical understanding of the impact of environmental injustice on social functioning and development.

This qualitative study sought to investigate environmental injustice in low socioeconomic settlements from the perspective of residents. Utilising a combined exploratory and descriptive research design, residents of a low socioeconomic settlement in Cape Town, South Africa, had been interviewed to collect thick descriptions of their lived experiences regarding environmental injustice. A semi-structured interview schedule had been utilised to conduct in-person interviews. A purposive sampling method was utilised to attain a sample of 15 participants who met the sample criteria.

The key finding of this study is that residents of a low socioeconomic settlement face adverse environmental conditions daily. This includes a lack of adequate access to resources such as clean water and basic sanitation services; insufficient infrastructure; and natural or constructed spaces that render residents vulnerable to crime and environmental dangers such as fires, flooding and toxic pollution. This lack of environmental resources and exposure to dangers is contrary to the Constitution of South Africa, which ensures a safe environment, housing and basic services to all citizens. Not only do the residents of low socioeconomic settlements experience these environmental injustices, but their plight is perpetuated by little recognition of the impact of the environment or legal protection of their rights.

The findings also highlight the profound impact of these unequal environmental conditions on the social functioning of residents and state of their social development within the low socioeconomic settlement. Residents are wrought with anxiety and fear; their self-concept is

degraded; they feel undignified; community cohesion dissolves; spiritual and cultural alienation occurs; residents lose hope for the future; and crime prevails. With little intervention by the government and social sector to address these continued issues, residents are trapped in an oppressive cycle of environmental injustice that prevents optimal social functioning and inhibits social development.

In the light of the findings, several recommendations are made for role players in different sectors, who may have an impact on the issue of environmental injustice in low socioeconomic settlements. These recommendations all relate to a need for a greater awareness of the impact of environmental injustice on social development, and a shift to addressing not only the resounding effects of the issue, but also attempts to counter its causes. Environmental injustice influences many spheres of society and the environment, and must therefore be addressed on a multi-disciplinary level.

Opsomming

Omgewingsongelykheid is 'n wêreldwye verskynsel wat die ongelyke verspreiding van omgewingshulpbronne en oneweredige blootstelling aan omgewingsgehare behels. Lae sosio-ekonomiese bevolkings dra altyd 'n hoër las van negatiewe omgewingstoestande soos besoedeling en kwesbaarheid vir natuurlike gehare, terwyl hulle minder toegang het tot omgewingshulpbronne soos plantegroei, publieke parke en voldoende infrastruktuur. Hierdie verskynsel is ook te sien in Suid-Afrika, waar ongelyke omgewings doelbewus onder apartheidsregering geskep is, en waarvan die impak tot vandag toe voortduur.

Die Maatskaplike Werk professie beklemtoon die belangrikheid daarvan om die persoon in hul omgewing te verstaan, maar daar is baie min empiriese begrip van die impak van omgewingsongelykheid op maatskaplike funksionering en maatskaplike ontwikkeling.

Hierdie kwalitatiewe studie het gepoog om omgewingsongelykheid in lae sosio-ekonomiese nedersettings vanuit die perspektief van inwoners te ondersoek. Deur gebruik te maak van 'n gekombineerde verkennende en beskrywende navorsingsontwerp is persoonlike onderhoude gevoer met inwoners van 'n lae sosio-ekonomiese nedersetting in Kaapstad, Suid-Afrika, om indiepte beskrywings van hulle daaglikse ervarings met betrekking tot omgewingsongelykheid te versamel. 'n Semi-gestruktureerde onderhousskedule is benut tydens die onderhoude. 'n Doelbewuste steekproefmetode is benut om 'n steekproef van 15 deelnemers te bekom wat die steekproefkriteria nagekom het.

Die sleutelbevinding van hierdie studie is dat inwoners van 'n lae sosio-ekonomiese nedersetting daagliks ongunstige omgewingstoestande ervaar. Dit sluit in 'n gebrek aan voldoende toegang tot hulpbronne soos skoon water en basiese sanitasiedienste; onvoldoende infrastruktuur; en natuurlike of beboude ruimtes wat inwoners kwesbaar maak vir misdaad en omgewingsgehare soos brande, oorstromings en giftige besoedeling. Hierdie gebrek aan omgewingsbronne en blootstelling aan gehare is teenstryding met die Grondwet van Suid-Afrika, wat 'n veilige omgewing, behuising en basiese dienste aan alle burgers verseker. Inwoners van lae sosio-ekonomiese nedersettings ervaar nie slegs hierdie omgewingsongelykheid nie, maar hulle lot word voortgesit deur min erkenning van die impak van die omgewing en min beskerming van hul regte.

Die bevindings beklemtoon ook die diepgaande impak van hierdie ongelyke omgewingstoestande op die maatskaplike funksionering van inwoners en stand van maatskaplike ontwikkeling binne die lae sosio-ekonomiese nedersetting. Inwoners ervaar angs en vrees; hulle selfkonsep word afgebreek; hulle voel onwaardig; gemeenskapsamehorigheid breek af; geestelike en kulturele vervreemding vind plaas; inwoners verloor hoop vir die toekoms; en misdaad neem oor. Met min ingryping deur die regering en die maatskaplike sektor om hierdie voortgesette kwessies aan te spreek, word inwoners vasgevang in 'n onderdrukkende siklus van omgewingsongelykheid wat optimale maatskaplike funksionering voorkom en maatskaplike ontwikkeling belemmer.

In die lig van hierdie bevindinge word verskeie aanbevelings gemaak vir rolspelers in verskillende sektore wat 'n impak kan hê op die kwessie van omgewingsongelykheid in lae sosio-ekonomiese nedersettings. Hierdie aanbevelings hou almal verband met 'n behoefte aan 'n sterker bewustheid van die impak van omgewingsongelykheid op maatskaplike ontwikkeling, en verg 'n verandering sodat nie net die heersende impak van die probleem aangespreek word nie, maar ook om die oorsake daarvan te voorkom. Omgewingsongelykheid beïnvloed baie sferes van die samelewing en die omgewing, en moet daarom op multidissiplinêre vlak aangespreek word.

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CHAPTER 1: INTRODUCTION

1.1 Motivation for the Study

South Africa has a history of dispossession, constitutionally enforced by the Group Areas Act, no. 41 of 1950, ensuring that those of low socioeconomic status had been granted poor geographic and social circumstances (Wilkinson, 2000:197; Republic of South Africa, 1950). This and other segregation policies were implemented in Cape Town with devastating results for those affected by it, such as forced removals and the separation of mixed-race families (Wilkinson, 2000:195-196). The early 19th century was also marked by rapid urbanisation – especially of African people – due to the pressures of the war-time economy and later due to the pressures of globalisation, which continues today (Lemanski, 2007:449; Wilkinson, 2000:197). This rapid urbanisation has surpassed government investment in infrastructure and amenities (Westaway, 2006:173). It is difficult to distinguish whether the current poor environmental state and resources of people living in townships are predominantly due to the enduring consequences of apartheid, or to the continuing marginalisation occurring as result of globalisation priorities (Lemanski, 2007:454).

Research findings prove that human interference for agriculture, industry, infrastructure and settlements can and do influence environmental change (Department of Environmental Affairs and Tourism, 2006:275). It is widely agreed upon that marginalised groups and people of a low socioeconomic class are those most severely affected by poor environmental circumstances and the negative consequences of environmental change (Dominelli, 2013:433; Coates & Gray, 2012:230; Kemp, 2011:1199; Patel, 2009:97; Krieg & Faber, 2004:666; Marlow & Van Rooyen, 2001:243). Patel (2009:97) also indicates that in South Africa, these groups will inevitably be comprised primarily of people of colour. This relates to the incidence of the compounding of various oppressions such as negative environmental circumstances and poverty (Dominelli, 2013:433; Milbourne, 2012:943).

Although everyone is affected by environmental change and the consequences of heavy industry, the poorest people are usually most vulnerable since they have limited resources due to low incomes, minimal choice concerning employment and location, restricted ability

to afford food, and few opportunities to save money (Dominelli, 2013:433; Department of Environmental Affairs and Tourism, 2006:277; Krieg & Faber, 2004:671).

Central to the concept of environmental justice is access to decision-making and control (Milbourne, 2012:944; Patel, 2009:100). Regardless of constitutional guarantees, people in the lowest economic classes and the environment are continually marginalised in decision-making regarding the distribution of environments (Patel, 2009:94). Strategies might be implemented to ensure environmental sustainability, but due to the unequal power structure intrinsic to current decision-making mechanisms, these strategies might not address the environmental needs in low socioeconomic areas at all (Patel, 2009:100).

Various indicators or elements are identified to measure environmental (in)justice, including proximity to waste sites, ambient air quality, unequal access to natural resources, displacement due to natural disasters, negative health and mental health outcomes due to physical conditions (including pollution) and configurations of residential separation that shape high risk areas (Kemp, 2011:1199-1200; Krieg & Faber, 2004:666).

The following elements and accompanying indicators of environmental (in)justice are prominent in the larger Cape Town Metropolitan area (Brunn & Wilson, 2013:287; Department of Environmental Affairs and Tourism, 2006:280; Wilkinson, 2000:197):

Geography and Space

After forced removals in mid-19th century, living conditions in the townships was insufferably overpopulated, a circumstance which has been perpetuated due to poverty and lack of resources for alternative housing (Wilkinson, 2000:197).

Lemanski (2007:450) argues that cities of the global South are pressured by global competition to adapt to the economic strategies of the North through spending scarce resources on attracting new investments. The spatial distribution of higher order public facilities and infrastructure of the larger Cape Town Metropolitan Area (CTMA) thus continue to reflect apartheid development, 70% of which are concentrated from the city centre along major routes to Bellville in the East and Muizenberg in the South (Wilkinson, 2000:198).

According to the Department of Environmental Affairs and Tourism (2006:277), the lack of access to land for housing prevalent on the fringes of large urban centres is a great contributor to human vulnerability to environmental change. Furthermore, high population density

ultimately results in severe soil erosion, limiting opportunities for the growth of vegetables and crops for own use (Department of Environmental Affairs and Tourism, 2006:280).

Fires

According to the Department of Environmental Affairs and Tourism (2006:286), the Western Cape will only get drier and warmer in the years to come due to climate change. The Cape Peninsula has been known for its unforgiving winds since its discovery, with the Cape Flats – the site of most Coloured and African townships – being particularly susceptible to and defenceless against these winds which relentlessly fuel and spread fires (Wilkinson, 2000:198).

According to Brunn and Wilson (2013:287), a major factor to consider in the townships is that many streets are unnamed, hindering fire departments and the police to respond timely in cases of fires. Many streets are also very narrow, which makes it difficult for relief vehicles to enter, which are already hindered by the scarcity of water sources in close proximity (Brunn & Wilson, 2013:287).

Flooding

The Cape Flats are persistently cold and wet, subject to frequent flooding during the winter, and difficult to drain because of the area's flat topography (Department of Environmental Affairs and Tourism, 2006:280; Wilkinson, 2000:198).

Since these settlements have already been cleared of most of its vegetation to make space for housing, little natural resistance is available during flooding, and landslides have become more prevalent (Department of Environmental Affairs and Tourism, 2006:286). Lack of tar roads also increases vulnerability during floods, as dirt roads wash away obstructing access to relief (Department of Environmental Affairs and Tourism, 2006:286).

Until very recently and still predominantly, the physical or natural environment and its influence on social problems, issues and development have largely been overlooked in Social Work theory and practice (Jarvis, 2013:40; Marlow & Van Rooyen, 2001:241). The ecosystems approach is a fundamental perspective in Social Work, directing attention to the relationship between the individual and the environment, but this has mostly been narrowly interpreted

only as the individual's social environment (Coates & Gray, 2012:232; Marlow & Van Rooyen, 2001:241).

Dominelli (2013:431) argues that Social Workers have a particularly important role to fulfil in supporting the mobilisation of communities and resources in cases where they find environmental degradation at an unacceptable level, and need to find alternative routes to sustainable social, economic and environmental development.

1.2 Problem Statement

Environmental injustice disproportionately affects people living in low socioeconomic areas, including the townships surrounding Cape Town (Dominelli, 2013:433; Milbourne, 2012:943; Coates & Gray, 2012:230; Kemp, 2011:1199; Patel, 2009:97; Krieg & Faber, 2004:666; Marlow & Van Rooyen, 2001:243; Wilkinson, 2000:197). It has also been found that this disproportionate division of environmental properties (both beneficial and detrimental), has an often severe impact on the overall functioning of the people negatively affected by it (Dominelli, 2013:433; Department of Environmental Affairs and Tourism, 2006:277-286; Krieg & Faber, 2004:671; Wilkinson, 2000:197-198). This topic has been investigated poorly in the field of Social Work, and especially so in South Africa (Kemp, 2011:1202; Marlow & Van Rooyen 2001:250). This study will thus seek to explore and describe the experiences of environmental injustice from the perspective of residents in a low socioeconomic community (an African township in Cape Town), framed by the Anti-Oppressive approach in Social Work. This is firmly rooted in human rights and social justice, two tenets of the Social Work profession (Dominelli, 2013:437; South Africa Council for Social Service Professions, 2007:6).

Kemp (2011:1200) ascertains that the Social Work profession lacks the presence of environmental research, practice, and policy. This author also emphasises the pressing need for theoretical specificity regarding the role of Social Work in environment-related issues, specifying that the Social Work field lacks frameworks for linking environmental influences to human outcomes (Kemp, 2011:1202). There is an emphasis on the need for empirical understandings rooted in local contexts to comprehend environmental injustice, where negative environmental conditions combine with racism and poverty, to result in multiple oppressions (Coates and Gray, 2012:233; Patel, 2009:98).

1.3 Aim of the Research

1.3.1 Goal

The goal of this study can be defined in the following way:

To gain an understanding of environmental injustice in a low socioeconomic settlement as experienced by residents, in order to assess possible implications for Social Work policy and practice.

1.3.2 Objectives

In order to achieve the goal of this study, the following objectives are proposed:

- To explain the nature and scope of environmental injustice in informal or low socioeconomic settlements.
- To describe the influence of the environment on the social functioning and social development of residents in informal or low socioeconomic settlements from an Anti-Oppressive perspective.
- To investigate environmental injustice as experienced by the residents of a low socioeconomic settlement in the Cape Town Metropolitan Area.
- To draw conclusions and make appropriate recommendations to address environmental injustice in informal or low socioeconomic settlements.

1.4 Theoretical Points of Departure

According to Clifford and Burke (2009:16), oppression not only refers to the exploitative use of power by a single person, but also the enduring monopoly of cultural, economic and political resources by dominant social groups, rendering society structurally unequal and creating marginalisation.

The Anti-Oppressive Perspective in Social Work comprises of reflecting on oppression and the imbalance of power at the root of social dysfunction on personal, cultural and societal levels (Dominelli, 2002:4). Alternatively, Dalrymple and Burke (1995:54) refer to the personal level as that of feelings or biography, the cultural as that of changed consciousness or ideas, and

the societal as the level of activity or political action. These levels are embedded within, and unavoidably influence, one another (Payne, 2005:278; Dominelli, 2002:4).

Clifford and Burke (2009:29-35) propose several principles to be followed by Social Workers and researchers when assessing service users' problems or addressing social issues from an Anti-Oppressive Perspective. This includes comprehensively examining social differences, assessing the scope and influence of social relationships and systems, comprehending the unique social histories of the groups or individuals involved, examining different kinds of power, and being conscious considering one's own social status. These principles will be referred to throughout the study.

1.5 Concepts and Definitions

The below subsection contains definitions and clarifications on important and often used concepts throughout the study.

1.5.1 Environmental (in)justice

Environmental justice as a concept emerged in the United States of America during the latter part of the twentieth century, rooted in the efforts of poor communities of colour to campaign against disparate exposure to risk from pollutants of industry (Patel, 2009:96; Rogge, 2008). The Encyclopedia of Social Work defines the term as an intricate construct, rooted in sustainable development and involving the management of world resources for current and future generations by taking into account factors of the environment, the economy, and social justice (Rogge, 2008).

To deconstruct the term, 'environment' can be broadly defined as the conditions, circumstances and objects by which someone or something is surrounded (The Penguin English Dictionary, 2007). 'Justice' is a term of ethics defined as the standard of fairness in which like cases are treated equally, the fair distribution of burdens and benefits between cases conceived as alike, or the principle that punishment should be proportionate to the related transgression (Collins English Dictionary, 2000). 'Injustice' can thus be explain as the lack of the above delineated requirements of justice.

Patel (2009:97) ascertains that there is wide-spread agreement that environmental justice is essentially about the distribution of environmental externalities. Dominelli (2013:431) defines environmental injustice as the failure to distribute the planet's resources impartially.

Low and Gleeson (1998:2) distinguish environmental justice from ecological justice, in the sense that the former refers to the just allocation of environments amongst peoples, while the latter involves the relationship between humanity and the rest of nature. The 'environments' of concern in environmental justice debates refer to both advantageous and disadvantageous environmental resources and properties (Patel, 2009:96).

1.5.2 Low socioeconomic/informal settlements

The United Nations (Habitat, U.N., 2015:1) defines "informal settlements" by three main criteria:

- Residential areas where the residents do not have permanency in tenure with regards to the homes or land they inhabit, which may include a spectrum of dwellings from squatting to informal rental agreements.
- The areas generally have little to no access to basic services and infrastructure related to cities.
- The housing in these neighbourhoods usually does not comply with up-to-date building regulations, while it is also largely situated in dangerous environments.

The nature of informal settlements, as defined above, are largely excluded and marginalised both socially and economically, due to barriers to access of resources and socioeconomic participation for residents (Habitat, U.N., 2015:2). For the purposes of this study, the terms "informal settlement" and "low socioeconomic settlement" had been used interchangeably in reference to residential areas as defined by the U.N. above.

In the context of this investigation, there has been much research of informal or low socioeconomic settlements in South Africa and Cape Town in particular. With regards to such residential areas in the country, another term which is relevant, is 'African townships'. This refers to the informal or low socioeconomic settlements in the Cape Town Metropolitan Area with the majority of African (black) residents, including Phillippi, Mfuleni, Khayelitsha, Langa and Nyanga (McDonald, 2008:xxiii). These areas were mostly established as sites of refuge for those removed from their original homes under the Group Areas Act of 1950, as well as for

migrants from other parts of the country seeking jobs and livelihoods closer to the city of Cape Town (Wilkinson, 2000:197).

The research report investigates environmental injustice in informal settlements across the globe, but the empirical study had been conducted in what can be referred to as an 'African township'.

1.5.3 Residents

The dictionary form of 'resident' is a person who lives in a certain place, or the act of living in a particular place (Collins English Dictionary, 2000). In this study 'residents' thus refers to people who reside in the settlement which is the site of the study.

1.6 Research Methodology

1.6.1 Research Approach

A qualitative research approach had been employed in this study. Qualitative research aims to observe and understand social phenomena in its natural context, and examine the meanings people ascribe to these phenomena (D'Cruz & Jones, 2014:64). This is an appropriate approach for the enquiry of this study, as the researcher aims to understand the residents' experiences of the phenomenon of environmental injustice in their community.

1.6.2 Research Design

Due to the limited Social Work research available on the subject of environmental (in)justice, this study consisted of a combination of exploratory and descriptive research designs.

Exploratory research aims to generate general understandings of certain phenomena, often in novelty fields of enquiry, and often leading to more specific research questions to be studied in that field (Strydom, 2013:151-152; Marlow, 2005:334). Descriptive research, on the other hand, aims to record observations of certain phenomena while not being essentially concerned with the antecedents thereof, but rather striving to collect facts to form thick descriptions (Strydom, 2013:153; Marlow, 2005:333).

1.6.3 Sample

The sample is a subsection of all subjects who possess the characteristics which the researcher hopes to study (Carey, 2013:46; De Vos, et al., 2011:391).

1.6.3.1 Organisation

The researcher conducted the study at the NPO, Yabonga (NPO no: 028/267) in Wynberg, Western Cape. This was a particularly well-positioned organisation from which to conduct the study, as Yabonga has several community centres which deliver psychosocial, health, educational, material, and nutritional support to township communities in Cape Town, including Phillippi, Crossroads, Nyanga, Mfuleni, Strand and Khayelitsha (Yabonga: Children, HIV and AIDS, 2015:5).

According to Kemp (2011:1204), multiservice organisations are particularly important providers of services in low-income communities. The sample did not consist of Yabonga service users, but staff members (programme coordinator/s) of the organisation had been able to assist the researcher with gaining access to the community which was the site of the study, and of which the staff member/s are residents.

1.6.3.2 Sample size

According to Patton (2002:244), the sample size in qualitative research will depend upon the aim and objectives of the study, but qualitative samples are likely to be small, seldom more (and often less) than 20 participants (Carey, 2013:47). Due to the time and resource constraints of this study, 15 participants had been selected for the sample.

Data saturation refers to the point in the data collection process where the researcher encounters repeated versions of the same information reported by several participants, and no longer encounters new data (De Vos, et al., 2011:350).

1.6.3.3 Sampling method

Purposive sampling was employed in this empirical investigation. This refers to a type of non-probability (no equal chance of selection) sampling where the choice of participants relies on the discretion of the researcher, based on specific criteria (De Vos et al., 2011:392). The criteria for inclusion in this specific study was the following:

- Participant must be a resident of the community (township) where the study will take place.

- Participant must be able to communicate in English.
- Participant must be 18 years or older.

1.6.3.4 Recruitment and selection

After obtaining institutional permission from the organisation (see Appendix 1), the researcher engaged staff members of the organisation, living and working in the community which was the site of the study, to assist in gaining access to the community. This was with permission from the organisation's general manager, and the research project was explained to the staff members in full.

When access was gained to the community which was the site of the study, prospective participants, who had been introduced to the researcher by the staff members, were presented with the opportunity to participate in the study, after the researcher had explained the research and conditions of participation to them. Participants were also asked whether they knew of any other residents who met the criteria and who might be interested to partake. In this manner, the snowball sampling method had been used to gain a sufficient number of participants. Snowball sampling refers to a type of purposive sampling in which selected participants introduce the researcher to other appropriate prospective participants (Carey, 2013:47).

1.6.4 Instrument for Data Collection

This qualitative study made use of a semi-structured interview schedule utilised during personal interviews. The semi-structured interview schedule is a set of questions to be referred to in personal interviews with all of the respective research participants, ensuring that the same subject matter was covered during each interview, but allowing the participant the opportunity to elaborate on the topic (De Vos et al., 2011:351-353).

Informed consent had been a prerequisite for data collection and was sought from each participant to ensure complete voluntary participation based on their accurate understanding of the research project described to them (Carey, 2013:13; De Vos et al., 2011:117). Before each interview, the aim of the study; anticipated period of the participant's involvement; research procedures; possible advantages or disadvantages of taking part in the research; and the researcher's credibility had been fully explained to the prospective participant (De Vos et

al., 2011:117). Each consenting participant completed a standard written informed consent form signed by both parties (See Appendix 4).

After informed consent was obtained for each participant, the researcher asked for permission to use a tape recorder in recording the interview. The use of a tape recorder allowed for the researcher to concentrate on what the participant was saying while capturing the data most accurately (De Vos et al., 2011:359). If a participant had not felt comfortable with the use of a tape recorder, detailed notes were taken. The recorded interviews were transcribed in full by the researcher for use in data analysis.

1.6.5 Pilot Study

The pilot study consists of the testing of the data collection instrument to determine whether it can be effectively used to obtain the relevant data from participants who meet the sampling criteria before data collection for analysis commences (De Vos et al., 2011:394; Persaud, 2010:1032).

The sample for the pilot study must mirror the proposed target population, and accordingly consisted of participants who meet the inclusion criteria of the study (Persaud, 2010:1032). Problems relating to the length of the interview, amount and wording of questions, and appropriateness had been identified and modified by means of evaluating pilot study results (Persaud, 2010:1033).

1.6.6 Data Analysis

The data collected from the semi-structured interviews were analysed as narratives. Narrative analysis does not necessarily require extensive life history data, but can focus on brief, topical stories which are situated around particular themes and can be in response to distinct questions (Germeten, 2013:612-614; Riessman, 2001a:697). Consequently, data can be successfully obtained from the semi-structured interview, which will be used as the data collection instrument (Germeten, 2013:614; Uprichard, 2011:104).

The motivation for narrative analysis was twofold. Firstly, analysis of semi-structured interview data as narratives allowed for the investigation of residents' experiences of environmental (in)justice over time and throughout the participants' lives (Germeten, 2013:614). Additionally, when people's narratives regarding their experiences are explored,

the opportunity is also present to investigate individuals' preferred and anticipated futures, which allowed for another vantage point on how participants feel their lives are being influenced by environmental (in)justice (Uprichard, 2011:105).

Secondly, this method of data analysis is relevant to the study's theoretical point of departure, i.e. the Anti-Oppressive Perspective in Social Work. Narrative analysis regarding social issues can draw attention to the opinions of those marginalised in society and this approach is in itself less dominating than more traditional methods (Holstein & Gubrium, 2012:1-2; Carey, 2009:151; Squire, et al., 2008:2; Riessman, 2001a:696).

Squire, Andrews and Tamboukou (2008:1) assert that there are no universal rules governing narrative analysis, however, the particular method for narrative analysis to be employed in this study will consist of the identification of salient themes and subthemes presented in the stories told by participants, and extracts of narratives may be employed to demonstrate these (Carey, 2009:156).

The way in which stories are told (or how particular questions are answered) is the focus of narrative analysis, and the researcher considered not only the content and descriptive language of these stories, but also participants' paralinguistic expressions, body language, and positioning of self and others in their stories (Germeten, 2013:617; Riessman, 2001a:698-702).

1.6.7 Data Verification

1.6.7.1 Assessing the Quality of Research

Data obtained from qualitative research was verified by assessing the following aspects (De Vos et al., 2011:419-421):

- Credibility, which involves the demonstration of the accurate identification and description of the subject.
- Transferability, entailing the identification of the feasibility of transferring of research findings from one context to another.
- Dependability, subject to the logical and accurate documentation and auditing of the research process.
- Confirmability, requiring that the research findings can be affirmed by another.

These aspects had been assessed throughout the research process by using a formal social research method (analytical induction), collecting and recording data accurately, completing member checks (see below), consulting Social Work peers, critically reflecting on the researcher's biases (researcher reflexivity), and by implementing a pilot study.

1.6.7.2 Member checks

Member checking is a process which involves procuring feedback from participants regarding research findings, and is an indispensable credibility technique in qualitative research (Franklin & Ballan, 2001:286). After the data had been collected and interpreted, and after conclusions are drawn and recommendations made, the researcher asked several participants to indicate whether they are of the opinion that the interpretations of the study are accurate and resemble their own input. Participants agreed that the results included a reflection of their own contributions.

1.6.7.3 Researcher reflexivity

According to D'Cruz, Gillingham and Melendez (2007:85), reflexivity as a social researcher involves critical self-awareness, and the assumption that knowledge is a social construction which is context-specific and ambiguous with regards to generalizability. The researcher thus included a report which evaluates the manner in which the researcher's own background and biases may have influenced the study (discussed in Chapter 4).

The component of reflexivity is also important to this particular study, as it is a key factor of the Anti-Oppressive perspective (Clifford & Burke, 2009:39)

1.7 Ethical Considerations

The primary ethical issues in research consist of harm to participants, competence of the researcher, voluntary participation, desecration of privacy, deception of participants, informed consent, debriefing of participants, working with contributors, and the distribution of results (De Vos et al., 2011:115-126). Sound ethics in terms of the above aspects had been addressed by means of the following precautions:

- The avoidance of harm to participants is an essential tenet of social research (Babbie, 2007:27). This had been ensured during the study by disclosing the subject matter and potential risks (if any) of the investigation to the participants, by ensuring that the

interview questions are not of an inappropriately personal nature, and suggesting referrals for debriefing, should participants require it.

- Informed consent had been obtained by informing the potential participants about the aims and content of the study, and affirming the voluntary nature of their participation. This will also serve as prevention of the deception of participants.
- The competence of the researcher is demonstrated by previous qualification (BSW) and registration as Social Worker with the South African Council for Social Service Professions (SACSSP), ensuring that fieldwork was done within the ethical guidelines for Social Work research (SACSSP, 2006:9-12).
- The possibility of desecration of privacy of the participants was countered by practicing confidentiality. The participants' anonymity is ensured by nameless interviews from which the data used in the study is attributed to numbered participants. The researcher and supervisor were the only persons handling the data. It was a priority to explain this to the participants, as well as the limits to confidentiality, including court orders and harm to self or others (Morris, 2006:246).
- The contributors to the research project consisted only of an academic supervisor, with whom a supervision agreement was undertaken.
- To validate the effective distribution of results, the researcher attempted to ensure that the language of the research report is clear and unambiguous; that the report is professionally edited for language and grammar; that the results are recorded and interpreted accurately; by avoiding plagiarism, and by practicing critical self-reflection with regards to research results (De Vos et al., 2011: 126).

To ensure that this study reflect good ethical practice, a submission for ethical clearance had been filed with the Departmental Ethics Screening Committee of the Department of Social Work at Stellenbosch University, and the study only commenced upon this submission's approval (Appendix 2). Clearance had also been obtained from the organisation through which the researcher accessed the site of the study, Yabonga (Appendix 1).

According to the provisions of the Research Ethics Committee: Human Research (2011:48), this study constituted low-risk research, since it involved participants unexceptional in terms of health and social status or development, and aimed to investigate everyday social settings.

1.8 Presentation

The research presentation is structured according to five chapters relating to the objectives of the study. The chapter layout is as follows:

Chapter 1: Introduction to the study.

Chapter 2: Literature review regarding the nature and scope of environmental injustice in informal or low socioeconomic settlements.

Chapter 3: Literature review regarding the influence of the environment on the social functioning and development of residents in informal or low socioeconomic settlements from an Anti-Oppressive Perspective.

Chapter 4: Results of an empirical study regarding environmental injustice as experienced by the residents of a low socioeconomic settlement.

Chapter 5: Conclusions and appropriate recommendations to address environmental injustice in informal or low socioeconomic settlements.

CHAPTER 2:

THE INFLUENCE OF THE ENVIRONMENT ON THE SOCIAL FUNCTIONING AND SOCIAL DEVELOPMENT OF RESIDENTS OF LOW SOCIOECONOMIC SETTLEMENTS

2.1 Introduction

One of the core tenets of Social Work as profession, practice and discipline, is social justice (IFSW, 2014). Social justice can be defined as an optimal state of affairs, where all members of a society enjoy the same rights, opportunities, protections and social benefits, while also having the same obligations (Barker, 2003:405). The concept also recognises the implicit need for historical inequalities and oppression to be recognised and resolved through proactive measures (Barker, 2003:405).

The theory of social justice is also at the heart of the environmental justice debate. Environmental justice is essentially a derivative of social justice, as it is also concerned with the just distribution of (environmental) resources, power, and decision-making control (Patel, 2009:98). Environmental justice proponents argue that all people, regardless of all demographic factors, are entitled to equal access to environmental goods, and equal protection from environmental 'bads' (Hobson, 2004:474).

There is no doubt that environmental and ecological patterns produced in living environments will substantially influence the quality of life of those living in these environments, and this will differ according to social (in)equality (Patel, 2009:96; Heynen, 2003:981; Jackson, 2003:191). Low socioeconomic settlements in South Africa, which are also primarily African, are characterised by a lack of adequate waste removal and sanitation services; insufficient access to water, energy sources, and adequate nutrition; as well as high levels of violence (Scott & Oelofse, 2005:450).

The Anti-Oppressive perspective posits that oppression (or conversely, empowerment) takes place on three levels: the personal/psychological level, the cultural level, and the structural level (Thompson, 2016:35-36; Dalrymple & Burke, 2006:116). On the personal level,

individuals take control of their lives or attempt to do so, a process which is influenced by cultural context (the second level), which in turn is rooted in the discriminatory relations of society, i.e. the structural level (Dalrymple & Burke, 2006:116). Figure 2.1 offers a visualisation of this ideology.

In addressing the second objective of this study, this chapter will look at what influence the built and natural environment has on the social functioning and development of people living in low socioeconomic settlements, particularly in terms of unequal environments. This will be done using the lens of the Anti-Oppressive perspective in Social Work. This is a relevant approach to the issue, since both Social Work and environmental justice find its roots in social justice, which addresses the forces of inequality and oppression in society (Patel, 2009:98; Barker, 2003:405).

The chapter will take on the form of a literature study across disciplines of social and natural sciences to get a clear view of the issue. The Anti-Oppressive perspective will be used to examine the effects of the environment on human and social functioning on the personal/psychological, cultural and structural levels of oppression, as delineated by the Anti-Oppressive perspective. As the influence of the environment is broad and far-reaching, this study will focus in particular on environmental influences identified to be of significance in low socioeconomic settlements around Cape Town.

2.2 The Lens of the Anti-Oppressive Approach

The following section is concerned with presenting an exposition of the Anti-Oppressive Perspective, as well as demonstrating its usefulness as orienting perspective for investigating environmental injustice in low socioeconomic settlements.

2.2.1 The Anti-Oppressive Perspective pertaining to environmental injustice

It is widely recognised in Social Work that various forms of oppression interact with one another, and although there may be a theoretical distinction between different forms of oppression, such as racism, sexism, and ageism, it actually happens concurrently and affect people in conjunction with one another (Healy, 2005:180). Anti-Oppressive or Anti-Discriminatory practice is a dominant perspective in modern critical Social Work, the core

assumption of which is that macro-social structures mediate social interaction on every level of life (Healy, 2005:173; 178).

The Anti-Oppressive perspective delineates the occurrence of oppression across three levels – the personal/psychological, the cultural, and the structural, as can be seen in figure 2.1 (Thompson, 2016:35-36).

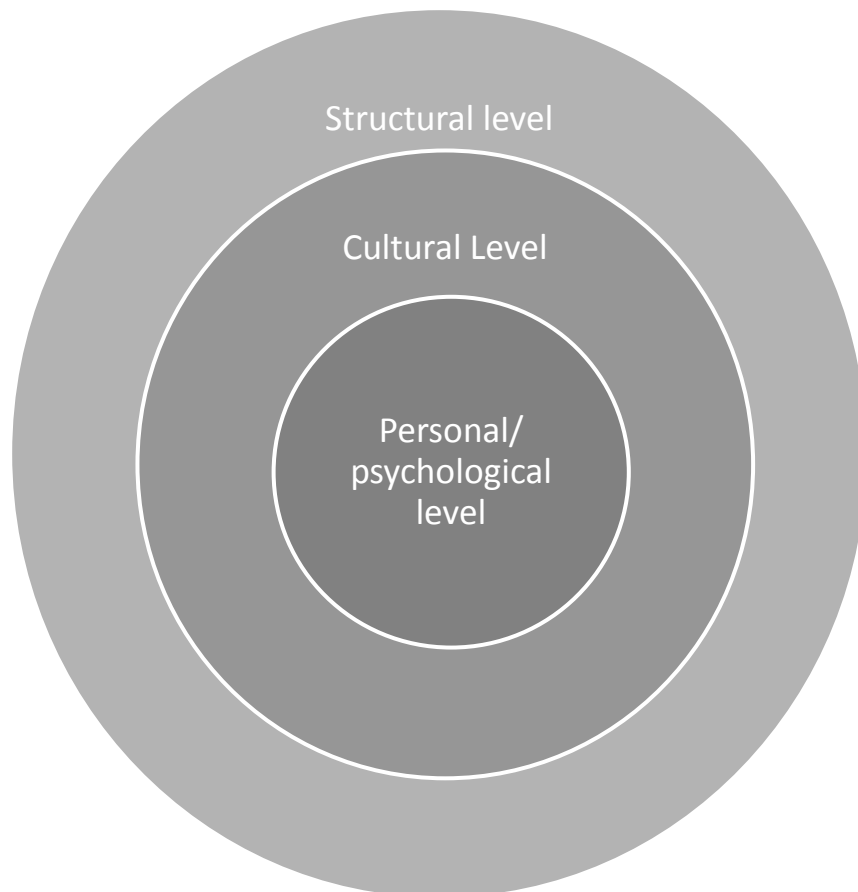


Figure 2.1: Model of oppression (Thompson, 2016:35-36)

It is important to note, however, that people's lives are affected by multiple and simultaneous forms of oppression, and that oppression on the different levels interact with and influence one another (Healy, 2005:180). Furthermore, Healy (2005:184) goes on to note that it is an essential function of Social Work to evaluate how social service users' social functioning and development are influenced by these multiple, nested oppressions.

Taking an Anti-Oppressive approach to the investigation of the influence of the environment and environmental (in)justice on social functioning is appropriate, since the perspective places utmost value on social justice in all spheres of Social Work (Healy, 2005:188).

Thompson (2016:42) notes that the personal-cultural-structural analysis of oppression is rooted within existentialist thought, and there is therefore a great emphasis on how individuals experience these oppressions on all levels. However, in order to understand the phenomenon of environmental (in)justice and its impact on people's lives, as well as to make consequent recommendations for Social Work practice, the cultural and structural contexts need to be considered in addition to the personal (Healy, 2005:189). Therefore, a framework is required to investigate environmental injustice as experienced by service users, which is delineated in the following sub-section.

2.2.2 A theoretical framework for investigating environmental injustice as experienced by service users

The Anti-Oppressive Perspective in Social Work imposes several ethical principles for practitioners/ service providers and researchers when interacting with service users and evaluating the oppression experienced by them (Clifford & Burke, 2009:29-35). These principles influence analysis of social issues through the lens of the Anti-Oppressive Perspective, and must be reflected upon consistently throughout the review process. Clifford and Burke (2009:29-35) stipulate five core principles of the Anti-Oppressive Perspective, which will be delineated below, and used to guide the review of the influence of the environment on the social functioning and development of residents of low socioeconomic settlements.

2.2.2.1 Comprehensive examination of social difference

In order to treat service users with respect and fully comprehend any Social Work case, there needs to be consideration of not only broad injustices, but also the details and lived realities of the people who experience these broader categorisations of injustices (Clifford & Burke, 2009:29). This includes the meticulous consideration of dual membership to both subordinate and dominant groups (Clifford & Burke, 2009:29). For example, a woman may be part of the middle class, thus affording her membership to a dominant economic group in South Africa, but her identity as a woman also ensures a subordinate position in society, due to structural issues of patriarchy in the country.

2.2.2.2 Assessing the scope and influence of social relationships and systems

The limits imposed, and options afforded by other individuals and external social systems may also significantly influence the scope of ethical decision-making in Social Work research and practice (Clifford & Burke, 2009:31). When considering multiple levels of oppression experienced by service users, the analysis necessitates a consideration of all actual and potential social relationships which may impact upon the social issue.

At this juncture, it is important to note that persistent and structural injustice and oppression are internalised by those who are being oppressed, and it must be evaluated how this affects individuals' interactions with one another (Clifford & Burke, 2009:32). For instance, patriarchal oppression may be so ubiquitous that it is internalised by women, who then participate in behaviours that perpetuate patriarchal oppression, such as subscribing to degrading stereotypes of women.

2.2.2.3 Comprehending unique social histories

Clifford and Burke (2009:33) emphasises that it is important for the Social Work service provider and researcher to understand not only the broader social context and history of the service user, but also the service user's personal experiences and background within that context.

In addition, in order to truly understand the various levels of oppression affecting the service user, the Social Work researcher/service provider must also evaluate how her own personal and social history influences how she investigates and understands the experiences of the service users, as well as what role dominant Social Work practices have in understanding these phenomena (Clifford & Burke, 2009:33-34).

2.2.2.4 Examining different kinds of power

Recognising that the investigation of any social issue and the level of oppression involved is a complex process, Clifford and Burke (2009:34-35) state that Social Work researchers/service providers must consider the different sources of power, with the acknowledgement that sources of power and oppression are dynamic, and are often surprising. For example, the inhabitant of a low socioeconomic settlement may be oppressed by an unequal economic system, but people from this community may in turn use violence to oppress others, which may be members of dominant economic groups.

2.2.2.5 Reflexivity in considering own social status

The last principle of the Anti-Oppressive Perspective emphasis by Clifford and Burke (2009:29-35), is that of reflexivity in own practice and research. This involves a critical look at how the Social Work service provider/researcher uses language and makes assumptions (Clifford & Burke, 2009:35). Here, the Social Worker must be mindful of her status, role and position within the various facets of society, and across social divisions such as class, race and gender (Clifford & Burke, 2009:36-37).

Keeping these principles in mind when applying the Personal-Cultural-Structural lens of the Anti-Oppressive Approach, the impact of the environment on the social functioning and social development of residents in low socioeconomic settlements can be thoroughly investigated. Therefore, however, it is useful to understand what is meant by social functioning and social development, and deconstruct how it can be evaluated. This will be done in the following section.

2.3 Social Functioning, Social Development, and Human Need

Before examining the influence of the environment on social functioning and development, as well as human need, it is necessary and useful to shed some light on the meaning of these terms, in order to gain understanding on the subject.

2.3.1 Defining Human needs in relation to social functioning and development

The first term that needs to be understood is 'social functioning'. Johnson and Yanca (2010:13) defines social functioning as how a person manages environmental demands of living in society. These authors (Johnson & Yanca, 2010:13) carry on to state that social dysfunction occurs where there is concern over unmet needs. Then, the second term to define, is 'social development'. The Encyclopaedia of Social Work (Miah, 2013:2) states that the underlying assumption of social development entails welfare and progress of all individuals, leading to people's overall well-being. Defining this third important term, Bradley (2015:11) posits that human 'well-being' encompasses all constituents that are intrinsically as well as instrumentally 'good for us'. Defining these constituents have been debated over the centuries, but the emphasised social science argument has been that these basic constituent, or needs, are universal (Gough, 2015:1195).

Looking at these definitions and understandings of social functioning and development, the most granular theme that emerges, is responding to human need. Similarly, Johnson and Yanca (2010:4) state that fulfilling people's need is essential to the functioning and development of any given individual or social system.

Understanding human need has long been and continues to be an essential tenet of Social Work (Dover, 2013:2). According to Healy (2005:179), this has particular importance to Anti-Oppressive Social Work, as this perspective requires Social Workers to respond to people's needs, irrespective of their social status.

2.3.2 Defining human need

According to Gough (2015:1195), 'needs' can be defined as a specific category of goals which is believed to apply to all people, and it is this universality that distinguishes need from want, desire, or cultural/contextual imperatives.

Hence, it is important to note that social systems and the individuals that comprise them, actively seek to fulfil their needs in ways that are dependent upon their environment and social circumstances (Dover, 2013:3). Furthermore, respect for human rights, one of the core principles of Social Work philosophy and practice, can be seen as the lawful directive to fulfil universal human needs (Dover, 2013:16).

Taking into account these factors of human needs, it can be defined as universal human imperatives necessary for survival, functioning and development, which are legally mandated by human rights, and its fulfilment dependent on the individual's overall environment.

2.3.3 Types of needs

Abraham Maslow is well-known for his hierarchy of human needs according to motivation, which was first published in 1943 and became the basis of many social science assumptions. It includes physiological needs, safety needs, love and belonging needs, esteem needs, self-actualisation, and needs associated to cognitive understanding/ intellectual needs (Johnson & Yanca, 2010:4).

Gough (2015:1199) argues that Maslow's theory of human motivation and others like it are not satisfactory, since it leans towards wants/preferences, and does not focus on universal human need. He postulates that basic human need, or first order goals, consist only of survival

and autonomy (Gough, 2015:1197). He then goes on to say that 'intermediate needs', or second order goals, must be met to fulfil survival and autonomy, but that these may be locked up in generations, and change in priority over time and with human and technological development (Gough, 2015:1204). Currently, he divides universal intermediate needs into the following categories: nutrition and clean water, protective housing, education, physical and economic security, significant primary relationships, security in childhood, sufficient and appropriate health care, safe birth control and child bearing, and a non-hazardous living and working environment (Gough, 2015:1202).

Furthermore, David Gil (2004, 2008) has been the biggest and most consistent advocate for the recognition of the importance of human needs in Social Work, making his definition and categorisation of needs uniquely suited to a Social Work investigation, and resonating with the imperative to achieve social justice (Dover, 2013:25). Gil (2003:33; 2008:342) identified the following universal and biologically intrinsic human needs: biological or material needs that must be fulfilled for human survival and development, psychological or social needs that must be fulfilled to achieve meaningful relationships, creative or productive needs pertaining to engagement in work, needs relating to security with regards to all previous categories, self-actualisation, and spiritual needs.

Table 2.1: Comparison of Human Need Theories

	AUTHORS ON HUMAN NEED			
	Maslow (1943)	Gil (2003; 2008)	Gough (2015)	
NEED CATEGORIES	Physiological needs	Biological/material needs	Nutrition & Water	Survival & Autonomy
			Protective Housing	
			Safe living/working environments	
			Safe child-bearing and birth control	
			Appropriate health care	
	Love and belonging	Social/psychological needs	Significant relationships	
	Safety	Security	Security in childhood	
			Physical & economic security	
	Intellectual needs	Productive/creative needs	Education	
	Esteem			
	Self-actualisation	Self-actualisation		
		Spiritual needs		

From table 2.1, it can be seen that the different needs categories identified by various authors overlap and intersect. As mentioned before, however, Gil's (2008; 2003) definition and categorisation has particular relevance to the Social Work profession, according to his philosophical affiliation and roots in social justice and human rights (Dover, 2013:25). The following section will thus investigate the influence of the environment on the fulfilment of human need, which is necessary for normal social functioning and development. Superimposed over these analyses, the lens of the Anti-Opressive perspective will be used

to analyse sources of oppression and discrimination in the fulfilment of needs when it comes to environmental influences.

2.4 The Influence of the Environment on Human Needs from an Anti-Oppressive Perspective

Using Gil's (2003:33; 2008:342) theory of human need in parallel with some of Gough's conceptualisation (2015), within the Anti-Oppressive personal-cultural-structural level (PCS) analysis, in identifying the influence of the environment on social functioning and development, there has to be an evaluation of where and how each need category is met, or in this case, unmet. The following discussion thus includes the different need categories (Gill, 2003) with alternative categorisation from Gough (2015) for the sake of thoroughness, within the PCS model of Anti-Oppressive analysis (Thompson, 2016), as set out in table 2.2 below:

Table 2.2: The influence of the environment on human needs within the Personal-Cultural-Structural analysis

Personal/psychological level
<ul style="list-style-type: none"> • Access to life-sustaining goods and services (physical/ material needs) • Psychological/ social needs • Self-actualisation
Cultural level
<ul style="list-style-type: none"> • Belonging/ spiritual needs
Structural level
<ul style="list-style-type: none"> • Participation in productive/creative processes • Sense of security

In the subsections that follow below, the needs set out in the above table will be discussed as it pertains to the environment.

2.4.1 The personal/psychological level

According to Bartkey (1990:23), psychological oppression, although occurring on the personal level, is also systematic and institutionalised, disheartening the oppressed and leaving them unable to recognise the nature of the agents responsible for their oppression.

The Anti-Oppressive perspective is, moreover, rooted in the philosophy of person-centred theory (Dominelli, 2002:61). The person-centred theory assumes that people's perceptions of reality are more important than so-called 'objective' reality (Rowe, 2011:63). For this reason, it is important to not only look at the empirically proven consequences and impact of the environment on people's lives, but also at how people experience the environment and what influence they feel it has on their own functioning.

An underlying assumption of person-centred theory (which is the philosophical base of the Anti-Oppressive perspective), is that individuals exist in a fluctuating universe of which they are the centre, and as an organism, a person will strive to actualise, preserve and improve herself/himself, whether this occurs through the fulfilment of organic or psychological needs (Rowe, 2011:63). This requires us to look at all forms of human experience to identify sources of oppression, and on the personal level, this includes physical (organic), psychological and interpersonal considerations.

Thompson (2016:37) states that it is important to note, that although the personal or psychological level is embedded within the cultural level, this is not to say that any one individual's behaviour or motivation is simply a reflection of the individual's culture. However, any person's behaviour should be understood within the boundaries of their cultural context.

2.4.1.1 Access to life-sustaining goods and services or physical/material needs

The need categories on the personal/psychological level of oppression (see figure 2.3) will be discussed in the sections below to show how these needs are fulfilled, or how people are oppressed. According to Gough (2015:1202), the physical or material need satisfiers or the life-sustaining goods and services we need to survive and develop, include nutritional food and safe, clean water; protective housing; non-hazardous environments to live and work in; appropriate health care services (including maternal health services); and physical and economic security. A critical reflection of how these goods and services are contributing to the functioning and development of people in low socioeconomic settlements will follow.

a) Nutrition and clean water

Nutrition has become more and more prominent in its role in human development on physiological, cognitive and social levels (World Bank, 2007:11-12). Smit et al. (2016:200) found that the layout of the built environment of an informal settlement in Cape Town increases the difficulty for residents to obtain healthy food. For example, residents have to either walk far distances to supermarkets or pay for costs of transport, which often forces them to do less regular shopping and rely on mostly non-perishable foods which are high in preservatives (Smith, et al., 2016:200).

The townships around Cape Town had been designed to simply house as many workers as possible, and not for people to farm on a sustainable basis, where the high density of dwellings and poor quality of land for farming simply do not allow for inhabitants to grow their own healthy food at a low cost (Smit et al., 2016:200). This, in conjunction with the access issues mentioned above, leave very little options for inhabitants of low socioeconomic settlements to fulfil their nutrition requirements.

Bartlett (1999:69) states that infants and children are most vulnerable to environmental influences on health, due to their biological susceptibility and carelessness in exposure to negative environments, such as playing amidst harmful waste. Poor sanitation, and little to no access to running water are some of the main causes of ill-health in children living in low socioeconomic settlements (Sverdlik, 2011:126).

Also, proper sanitation services and access to clean water, which are either absent or of poor quality in informal areas, are essential in combating the prevalence and spread of illness and disease in low socioeconomic settlements, especially when it comes to infants and young children, who are more susceptible to adverse health conditions (Bartlett, 1999:65).

Gladstone, Muliyl, Jaffar, Wheeler, Le Fevre, Iturriza-Gomara, Gray, Bose, Estes, Brown and Kang (2008:479) found that infants living in an informal settlement in India were much more susceptible to respiratory and gastrointestinal health concerns. Several studies link diarrhoeal disease, which is disproportionately experienced by children under five, to poor water quality and lack of adequate sanitation in low socioeconomic settlements (Semba, de Pee, Kraemer, Sun, Thorne-Lyman, Moench-Pfanner, Sari, Akhter & Bloem, 2009; Bartlett, 2008; Haque, Mondal, Kirkpatrick, Akther, Farr, Sack & Petri, 2003). Diarrhoea in infancy has been linked

with normal growth retardation and poor nutritional status, as well as with decreased cognitive functioning when found concurrently with stunting (Berkman et al., 2002:564).

b) Protective housing

Living in informal housing or dwellings, such as 'shacks', as it is colloquially referred to in South Africa, has significant implications for human health and well-being (Shortt & Hammett, 2013:623). Shortt and Hammett (2013:621) had found that inhabitants of informal housing were more than three times as likely to report an injury or illness than those living in formal structures. This was all in the same neighbourhood, controlling for other possible influencing factors. The above study also found that informal housing was positively correlated with adverse mental health outcomes, where a great number of residents reported feeling anxious due to insufficient security, or depressed because of the circumstances they live in (Shortt & Hammett, 2013:621).

Children living in inadequate, overpopulated dwellings, such as is the case in informal settlements, are also much more vulnerable to pneumonia, which is a foremost cause of infant deaths (Sverdlik, 2011:128; Kyobutungi, Kasirra Ziraba, Ezeh & Ye, 2008:1; Reis, Palma, Ribeiro, Pinhero, Tamara, Ribeiro, Machado Cordeiro da Silva Filho, Moschioni, Thompson, Spratt, Riley, Barohi, Reis & Ko, 2008:204-205).

c) Non-hazardous living and working environments

The impact of the natural and physical environment on the health of individuals and communities is far-reaching (Sverdlik, 2011:123). Jackson (2003:191) even notes that visual and physical access to nature is the most essential environmental feature to promote good health. Rigolon (2016:161) has noted that contact with nature, whether it be in the form of public parks or simply vegetation, has significant benefits for increasing people's general health and perceptions of well-being, cognitive functioning, and socio-emotional development.

The presence of trees and other species of vegetation offers a great many benefits for humans and man-made structures in urban environments, such as providing shade or creating barriers to strong winds (Ernstson, 2013:9; Heynen, 2003:985). Trees, for example, are also essential in conserving water, energy and carbon dioxide for human consumption, as well as regulating the urban climate and improving ambient air quality, improving general health, decreasing stress levels, and creating social spaces (Ernstson, 2013:9; Heynen, 2003:985). The benefits of

the presence of trees and vegetation in living environments are therefore abounding, and as noted above, positively influences physical and emotional health, while also promoting safety from environmental dangers.

Parsons, Besenyl, Kaczynski, Wilhelm Stanis, Blake & Barr-Anderson (2015) present an interesting study of public parks and commons, where parks surrounded by industry, traffic and high-crime sites were associated with poorer community health and cohesion outcomes, which is the case of low socioeconomic settlements. Parks are, indeed significant in promoting health and lowering rates of obesity by encouraging physical activity in communities (Rigolon, 2016:161; Parsons et al., 2015:286). This benefit of public parks, however, seems to be compromised when parks are bordered by industries and high-crime sites (Parsons et al., 2015:287).

Furthermore, the physical infrastructure in a neighbourhood or living area may impact on the life of inhabitants in a number of ways. Poor infrastructure in terms of inadequately maintained roads, for example, results in nearly 1.2 million deaths from traffic accidents every year (Peden, Scurfield, Sleet, Mohan, Hyder, Jarawan & Mathers, 2004:ix).

Injuries are health concerns affected by environmental circumstances, but mostly neglected, although it causes more than five million deaths world-wide each year (Sverdlik, 2011:138). The poor construction and limited safety measures of informal dwellings lead to a great deal of fire-related accidents and exposure to dangerous chemicals and poisons (Bartlett, 2002:1).

Similarly, people who live in low socioeconomic settlements are of greater risk of occupational injuries due largely to participation in the informal economy where safety is sub-standard, a risk which is compounded by the impact of poverty on options for treatment and recovery (Sverdlik, 2011:124; 130). Pick, Ross and Dada (2002:193) note, for example, that (female) vendors in informal settlements in Johannesburg experience harassment; injurious accidents in food preparation; and muscular or skeletal problems from lifting heavy items.

Likewise, air pollution, which has been found to be of unacceptable levels in low socioeconomic settlements in Cape Town, has severe implications for human health, as the most common 'greenhouse gas', nitrous oxide, is easily absorbed by the membranes of the human respiratory tract, and can cause diseases like asthma and cancer (Western Cape Department of Environmental Affairs & Development Planning, 2013:9).

Also, climate change contributes largely to ill-health in low socioeconomic settlements, especially in the form of non-communicable diseases and respiratory diseases (Shortt & Hammett, 2013:622; Sverdlik, 2011:142). This is very significant, since chronic diseases impact people's quality of life to a great degree and have severe financial implications (Allender, Foster, Hutchinson & Arambepala, 2008:939).

The effects of climate also interact with pre-existing health conditions and chronic illnesses, when heat brought on by air pollution, for example, exacerbates cardiovascular and respiratory problems or triggers acute renal failure (Kjellstrom, Butler, Lucas & Bonita, 2010:99-100). It is therefore a complex problem which influences several spheres of people's lives, a prominent one of which is human health.

Physical activity is a prerequisite for good health, and a lack thereof plays an important role in many serious health conditions, such as obesity, which in turn augments the risk of diabetes and other serious diseases (Jackson, 2003:195). Although residents of low socioeconomic settlements also think physical activity is important for maintaining good health, there are not many opportunities for this due to a lack of sports facilities, recreational spaces, and public infrastructure such as appropriate lighting (Smit, Lannoy, Dover, Lambert, Levitt and Watson, 2016:201).

d) Health Care

Sverdlik (2011:123) notes that residents of informal settlements carry a disproportionate burden of ill-health throughout their entire lives. As these health inequalities are created and reformed across the life span of residents, the possibility of improved health becomes more and more vague (Sverdlik, 2011:124).

Research in informal settlements in Nairobi have even shown that dangers to health due to environmental circumstances start in the prenatal phases, as pregnant women often have limited access to adequate health services or emergency transport, further limited by lacking infrastructure, such as accessible roads in densely populated areas (Ziraba, Mills, Madise, Saliku & Fotso, 2009:47).

In low socioeconomic or informal settlements, health issues which may be caused by these various factors identified above are exacerbated by the lack of health infrastructure and essential services available to inhabitants (Sverdlik, 2011:124; Satterthwaite, 2007:57). In

addition to few clinics and health centres available to inhabitants, the informality and poor conditions of roads are also not conducive to emergency vehicles and mobile health services to reach all of the inhabitants of informal settlements (Mels, Castellano, Braadbaart, Veenstrar, Dijkstra, Meulman, Singels & Wilsenach, 2009:332). This has the implication that inhabitants of low socioeconomic settlements bear a double burden of health, where they are firstly more susceptible to ill-health and disease due to the unequal natural and man-made environment around them, but then also find it more difficult to access services which may prevent or cure such conditions of ill-health.

e) Physical and Economic Security

Sverdlik (2011:134) notes that the effects of ill-health are compounded and perpetuated by poverty, which means that residents are caught in a trap of continued medical concerns and economic vulnerability. This also leads to the constant fear of illness and its financial implications, which affects mental well-being and quality of life (Sverdlik, 2011:135).

Equally important, climate change and its effects, largely produced by industry in more affluent areas, have been termed the largest international health threat of the century (Storey, 2012:114; Costello, Allen, Ball, Bell, Bellamy, Friel, Groce, Johnson, Kett, Lee, Levy, Maslin, McCoy, McGuire, Montgomery, Napier, Pagel, Patel, Puppim de Oliveira, Redclift, Rees, Rogger, Scott, Stephenson, Twigg, Walff, & Patterson, 2009:1693). The influence of this phenomena reaches across food insecurity, inadequate water, increased vulnerability to natural disaster, and changing communicable disease patterns (Sverdlik, 2011:145; Costello et al., 2009:1693, Frumkin, 2001:234). As mentioned before, the negative effects of climate change are disproportionately carried by the poor living in low socioeconomic settlements, although they contribute the least to the issue (Sverdlik, 2011:145; Bull-Kamanga, Diagne, Lavell, Leon, Lerise, MacGregor, Maskrey, Meschak, Pelling, Reid, Satterthwaite, Songsore, Westgate, Yitambe, 2003:193).

These various need categories collectively represent the overarching human needs requiring physical or material fulfilment. The above discussion elucidates how the environment impacts upon the fulfilment of these needs, and the literature provides strong evidence of how this fulfilment may be adversely affected for residents of low socioeconomic settlements. Fulfilling physical or material needs are not comprehensive of achieving optimal social

functioning and social development on the personal/psychological level, however, and the following section will consider psychological needs and social relations.

2.4.1.2 Psychological Needs and Social Relations

The second category of needs on this level is psychological needs in and social relations. Table 2.3 shows this category falls within the personal/psychological sphere of oppression. The distance of larger informal settlements on urban borders as well as peri-urban settlements from economic centres have led to the division of families, where one or more parent lives away from home for the majority of time in order to sustain a job closer to the city (Scott & Oelofste, 2005:450). Many residents of informal settlements also often site their current dwellings as temporary, and while some family members stay in these dwellings, other family members (such as children) move between relatives in the informal settlements and back in their rural hometowns (Mels et al., 2009:333). This has a detrimental impact on traditional family structures and relationships within the family, extending to personal and psychological well-being (Scott & Oelofste, 2005:450).

As mentioned before, low socioeconomic settlements around Cape Town lack the resources for meaningful exercise. A lack of exercise has much deeper implications than endangering optimal cardiovascular and general physical health (Wilson, Ellison & Cable, 2015:101; Jackson, 2003:195). Medical research has linked progressive exercise, for example, with chronic pain management in post-traumatic stress disorder (PTSD) patients, who often have traumatic memories and anxiety triggered by pain (Scioli-Salter, Forman, Otis, Tun, Allsup, Marx, Hauger, Shipherd, Tyzik & Rasmusson, 2016:103). In this sense, exercise is an important protective psychological factor, and lack of opportunity to participate in it may contribute to greater difficulty in optimal psychological functioning, especially in populations who already suffer greater psychological risk.

The unstable environment of informal settlements in South Africa contributes greatly to psychological stress and mental ill-health (Smit et al., 2016:201). A significant effect of residents in low socioeconomic settlements' vulnerability to environmental forces is the universal feeling of insecurity, stress and loss of hope for the future (Shortt & Hammett, 2013:622). The unsafe environment created by lacking infrastructure, poverty, unemployment, lack of resources, poor quality informal housing, and fear of natural disasters

often leave inhabitants in a constant state of anxiety, stress, and depression (Smit et al., 2016:201; Shortt & Hammett, 2013:621).

Lack of greenery and natural resources may also have a great impact on mental health, as contact with nature has been found to have a positive and restorative influence on mental health (Jackson, 2003:192; Frumkin, 2001:236). Wells (2000:775) notably found that the cognitive functioning of children from low-income urban settings were improved when they moved to neighbourhoods with access to green vegetation.

Lack of communal spaces for socialisation, poor infrastructure and public transports, migration patterns, negative neighbourhood perceptions, and spatial distribution of living areas and amenities may all lead to low social cohesion in low socioeconomic settlements (Shortt & Hammett, 2013:622; Moses, 2006:113; Mels et al., 2009:334; Jackson, 2003:194; Kuo, Sullivan, Coley & Brunson, 1998:823). A sense of belonging and universal community cohesion has been found to be important factors in ensuring mental well-being (Shortt & Hammett, 2013:623).

Jackson (2003:194) notes an interesting point regarding lack of road infrastructure, in that poorly maintained/missing road signs and landmarks may bring about a sense of general psychological disease and discomfort, as these are features which help people navigate their everyday lives. In addition, long commuting times to work in urban centres, as well as the unreliability and frequent danger of using public transport may cause a great deal of stress and anxiety in individuals (Jackson, 2003:196).

2.4.1.3 Self-actualisation

The third need category on the personal/psychological level of oppression relates to self-actualisation. The formation of a concept of self is an essential process in human development, and will influence physiological development, behaviour and general well-being throughout the life course (Benninger & Savahl, 2016:1). The formation of a positive self-concept is especially important in childhood, as it can lead to positive psychological development and better academic achievement, whilst a negative self-concept often leads to adjustment disorders, shame, depression, aggressive behaviour and other maladaptive psychological states (Benninger & Savahl, 2016:2).

From an Anti-Oppressive Perspective, concepts of self and identity are formed by social interaction, and are therefore contingent upon the environment in which the individual finds herself/himself (Dominelli, 2002:40). How the self-concept is defined will then, in turn, shape the individual's interaction with those around her (Laird, 2008:48). This may lead to the cause of oppression on the personal level, as an individual's belonging to a dominant or minority social environment, for example, may influence their participation in the oppression of others or being subject to oppression (Dominelli, 2002:40).

In a systematic review of research, Benninger and Savahl (2016:15) concluded that conditions such as poverty and lack of infrastructure for social and economic activities are constricting in allowing children to develop a healthy self-concept. A study in South Africa (Moses, 2006:112) found that children felt negative identities were externally imposed on them due to the reputation of violence and poverty their community suffers.

People, and children in particular, who live in marginalised areas such as informal settlements may find it difficult to rise above conditions of oppression, with the result of negative perceptions being internalised to construct the self-concept (Benninger & Savahl, 2016:16).

Ndleya (2011:11) posits that service delivery has a tangible influence on the lives and self-actualisation of residents of low socioeconomic, urban communities. The author reasons that enhanced public services are positively correlated to improved dignity of communities which had been denied basic human rights under apartheid law (Ndleya, 2011:11).

Reviewing the literature from an Anti-Oppressive Perspective, physical or material needs, psychological needs and social relations, and self-actualisation are the broad categories which influence social functioning and social development on the personal level of analysis. This review offers a comprehensive exposition of the various factors which may influence the fulfilment of human need, and consequently social functioning and development. The following section will consider these elements on the cultural level of analysis.

2.4.2 The Cultural Level

In order for a Social Work researcher or practitioner to understand and address discrimination and oppression, one must move beyond the level of the personal or psychological, and consider cultural influences (Thompson, 2016:38-39).

According to Thompson (2016:35-36), the cultural level in Anti-Oppressive analysis refers mainly to shared meanings, and denotes all the norms and values people generally take for granted. This includes religion, patriotism and other explicit belief systems, and is the most prominent factor in determining what is viewed as normal in any given society (Thompson, 2016:36). The most significant and recurring themes that arose from the literature when it relates to the impact of the environment on the cultural level of oppression include social bonds or a sense of community, interpersonal violence, fear of crime, and cultural alienation. These themes are expanded on below.

2.4.2.1 Belonging and Spiritual Needs

Humans are, by nature, social beings, and there is a broad range of emotional and physical benefits to be gained from interpersonal relationships (Jackson, 2003:193). Social capital, which begins with the building of community on a neighbourhood level, allows for the aversion of many risk factors which may negatively affect human health and well-being, such as illness, poor lifestyle habits, and mental instability (Jackson, 2003:193).

The natural surroundings of neighbourhoods can have a positive impact on creating a sense of community pride and social coherency, in spite of adverse social and economic factors which may be present in such areas (Moses, 2006:118). Natural spaces and common greenery also provide an intersection of informal contact between people, nurturing social interaction and consolidating bonds between neighbours (Jackson, 2003:194; Kuo et al., 1998:823).

People socialise most with those closest in proximity to them (Lee, 1973:101). This is significant because, people tend to accept and take on the values and attitudes of a social group to which they belong, whether it is because of restricted exposure, fear of rejection, or lack of information (Lee, 1973:101-102). The implication of this is that people in closed-off neighbourhoods with little mobility will form very homogenous sets of values, which can be restrictive to individual and collective social development, and represents a negative consequence of too-narrow social bonds, which is often the case in lower socioeconomic settlements (Lee, 1973:101).

On the other side of the spectrum, there is a social disconnect on the neighbourhood level. Moses (2006:113), who conducted a study about children's perceptions of their neighbourhood in a lower socioeconomic settlement on the South Peninsula of the Western Cape, found that schools, sports clubs and recreational facilities with access to better

resources were situated in more affluent, white neighbourhoods, creating a one-way movement still reminiscent of apartheid structures. This, in conjunction with the wider public and media's negative perception of the neighbourhood, leads to the social isolation of inhabitants and the limited socialisation opportunities available to children (Moses, 2006:113-114). Children who participated in this study also self-reported that this social isolation leads to negative experiences within the community, such as gossip and social judgement (Moses, 2006:114).

Shortt and Hammett (2013:622) also produced an interesting study of an informal settlement in Hout Bay, Cape Town, in which they have found that inhabitants of the settlement had overwhelmingly negative views about their neighbourhood, due to the lack of public infrastructure. The residents listed a major lack of sanitation systems, recreational and social facilities, lighting and economic opportunities as examples that have a detrimental effect on their well-being (Shortt & Hammett, 2013:622).

Lack of infrastructure for access to public transport imposes limits on children and youth's opportunities for positive socialisation, either confining them to their immediate neighbourhood or resulting in them moving around in places made unsafe through crime (Moses, 2006:122). Similarly, children stated that a lack of recreational facilities, such as group sports clubs, hinders them in building positive self-esteem and resisting peer pressure (Moses, 2006:123).

Long distances between low socioeconomic settlements and urban centres (where many inhabitants work) also negatively affects the formation of social bonds, as more commuting time reduces time spent on community involvement (Jackson, 2003:196).

Lastly, the mixture of cultures and relative socioeconomic status which is brought about in the informal settlements of Cape Town, due to migration from rural areas and neighbouring countries, have often resulted in a generally low level of social cohesion and organisation in these communities (Mels et al., 2009:334).

People of the IsiXhosa culture, who make up the majority of the population of Cape Town informal settlements, traditionally have a very strong relationship with nature, and the natural environment has a strong spiritual significance for them (Dold & Cocks, 2012:18; Cock, 2007:33). As life in urban informal settlements have meant a disconnection from nature in

the sense that less access to natural resources is available, people are also separated from their cultural heritage and practices (Dold & Cocks, 2012:15).

2.4.3 Structural level

Thompson (2016:36) denotes the structural level of oppression as the underlying and established social division and accompanying discrimination which forms the fabric of society. This necessitates an investigation of the socio-political forces which drives society, which can take on a number of forms. Amongst others, dimensions of the structural level include class, age, gender, race, and disability (Thompson, 2016:38).

Africa as continent has been the site of a struggle for power over human capital and natural resources, and this makes the environment an essential part of investigating power structures and social injustice (Carruthers, 2006:811). The most prominent themes that arose from the literature included economic oppression, the creation of an underclass, marginalisation in decision-making, and gender oppression.

2.4.3.1 Participation in productive/ creative processes

Smit et al. (2016:200) note that informal settlements in Cape Town in particular are mainly residential and isolated, with the implication of limited opportunities for economic development and participation. Not only do residents of informal settlements have to pay more to commute great distances to get to work in urban centres and earn a living, but studies have also found that those who commute longer distances to work experience higher rates of accidents and absenteeism in their occupation, which may negatively affect their job and financial security (Jackson, 2003:196).

Lack of infrastructure when it comes to roads and transportation have far-reaching impacts on residents' social and economic lives. One such impact is that residents of informal settlements have less access to larger, market-regulated goods providers, and are therefore forced to obtain products and services from small-scale vendors who may exploit prices (Beall, Crankshaw & Parnell, 2000:838).

As mentioned in the analysis of oppression on the personal/psychological level, the lack of green spaces can have detrimental effects on health, and significantly, on the cultural level, where it can negatively affect socialisation and sense of community. This compounds on the structural level, as the need for social networks (and therefore, the features which promote

social networks) are more important for people who live in low socioeconomic communities, as social capital is a crucial factor in surviving the conditions of poverty (Kuo et al., 1998:846).

As for production in the sense of self-sustainability, the majority of African townships around Cape Town were initially planned and built simply as dormitories for workers and not as independent neighbourhoods, and as such no provision had been made for urban agriculture, a situation which contributes to structural food insecurity and issues such as non-communicable disease (Smit et al., 2016:200).

2.4.3.2 A sense of security

Lack of infrastructure, such as properly maintained roads and sufficient street lighting, in conjunction with poorly resourced law enforcement in informal settlements leads to a pervasive fear of crime which affects people's lives in a number of ways, such as restricting physical movement and contributing to psychological stress (Smit et al., 2016:201, Brunn & Wilson, 2014:284). Smit et al. (2016:201) also argue that the isolation and segregation of Cape Town's informal settlements contribute to this issue.

One of the major causes of fear of crime, which is also of particular relevance in informal settlements, is poor police visibility in neighbourhoods (Grinshteyn, Eisenman, Cunningham, Andersen & Ettner, 2016:110). This is certainly the case in Khayelitsha, where the police-to-population ratio is far below the national norm (Western Cape Department of Community Safety, 2013).

In analysing census data and panel survey data of Khayelitsha, Seekings (2013:19) found that fear of crime is the single largest obstacle perceived by residents in becoming entrepreneurs and starting their own small businesses. This finding not only has implications for residents' perceived security in terms of physical safety, but according to the finding on fear of crime, also in terms of potential financial security.

Interpersonal violence, either between strangers or family members, cannot be attributed only to psychological factors, and has been found to have some causal root in the (unequal) spatial distribution of communities and associated issues of access to resources (Almgren, 2005:218). Morenoff, Sampson and Raudenbush (2001:517;528) refer to "concentrated disadvantage" as a significant predictor of interpersonal violence, and explains it as denoting

communities or areas which experience great degrees of poverty, broken family structures, and marginalisation.

Almgren (2005:222) infers that the best way to mitigate interpersonal violence on a structural level, is to promote a sense of collective self-efficacy among inhabitants of a neighbourhood or members of a community. This, however, becomes less and less likely in low socioeconomic settlements, as inhabitants often feel a low sense of social cohesion due to migration, long distances between home and work, lack of infrastructure for socialisation, and insufficient contact with nature (Shortt & Hammett 2013:622; Mels et al., 2009:334; Moses, 2006:122; Jackson, 2003:118; 196).

The inherent unjust nature of low socioeconomic settlements extends beyond the segregation and discrimination posed against inhabitants of these areas as a whole, but also creates unjust social structures within low socioeconomic settlements and among inhabitants. This occurs, for instance, through the highly arbitrary process of providing government home upgrades in the townships. In the informal settlements of the Western Cape, a social issue has arisen regarding the in situ upgrading of informal dwellings to RDP houses, where such upgrading (which is often biased and selective) results in tension within communities, producing an 'underclass' of residents who have not been selected to benefit from housing projects (Shortt & Hammett, 2013:623-624).

2.5 Conclusion

This chapter has looked at the impact of the environment on human needs, and consequently social functioning and development, from the Anti-Oppressive Perspective in Social Work. The review of the literature investigated both the impact of the environment on social functioning and development on a large scale and broad basis, as well as in relation more specifically to the South African context, and the informal settlements of Cape Town.

The Anti-Oppressive Perspective to investigating this range of phenomena is appropriate, since it is a prominent perspective of critical Social Work and shares its roots in social justice with the environmental justice movement. Environmental injustice is an issue of inequality and subsequent oppression, and the Anti-Oppressive Perspective allows for its investigation on the personal, cultural and structural levels of social functioning and development.

There is ample literature and research regarding the influence of the environment on the personal or psychological level. In fact, this review has shown that the state of the physical and natural environment people live in can impact all life-sustaining goods and services, including nutrition, clean water, protective housing, non-hazardous living/working environments, health care and physical/economic security. The state of both natural and man-made environments in low socioeconomic settlements adds a great range of risks to this wellbeing. This exposition also looked at the influence on psychological wellbeing and the formation of self-concept, as well as at family life, referring to social interactions amongst humans which influence them on this personal level. Self-actualisation and its connection to social functioning and development had also been investigated, and here also it was found that the environment can have a significant influence.

On the cultural level, the impact of the environment had been found to be no less significant, as many authors reflected on major themes such as social bonds and a sense of community, and spiritual or cultural alienation. This section had looked more specifically at the South African context, due to the country's particular historical context and current demographic segregation of inhabitants living in low socioeconomic areas.

Lastly, the structural level of oppression when it relates to the influence of the environment had been reviewed, and the themes which emerged included economic oppression, the challenges of participating in productive processes, and a sense of security in all spheres of life. These are all prominent themes in structural oppression experiences across the globe today, and here it is clear what role the environment and its socio-political connotations may play.

Taking into account all of these considerations on the different levels of social functioning and intrinsic oppression, it is evident that the environment, whether it be natural surroundings or man-made settings, has a great influence on human life and social interactions. This has significant implications for Social Work, as it affects a range of social issues which should be taken into account by practitioners when working with service users living in low socioeconomic settings. It also provides Social Workers with a better understanding of the social issues they are faced with as a profession, and possible alternative solutions to providing help to service users. Finally, the body of research and literature investigating the influence of the environment legitimates more extensive Social Work research into

environmental (in)justice and its implications for Social Work. The Social Work profession and Anti-Oppressive Social Work in particular, requires all to be critically reflective of the dimensions which influence social functioning and development (Thompson, 2016:42), and this analysis of the environment's influence on the former provides novel reflection in the profession within South Africa.

CHAPTER 3:

THE NATURE AND SCOPE OF ENVIRONMENTAL INJUSTICE IN LOW SOCIOECONOMIC SETTLEMENTS

3.1 Introduction

Environmental (in)justice is a fairly novel discourse to influence policy and research in South Africa (Patel, 2009:98). The concept is inextricably related to the environmental justice movement, pioneered by poor and marginalised communities in reaction to their exposure to unequal levels of dangerous environmental impacts in the USA, emerging in the 1980's (Patel, 2009:96; Steady, 2009:2).

There has been a wide range of studies reporting the clear and present incidence of environmental injustice in low socioeconomic settlements around the world (Parsons et al., 2015; Heaney, Wing, Wilson, Campbell & O'Shea, 2013; Schoolman & Ma, 2012; Scott & Oelofse, 2005; Bullock, 2001:56; Beall et al., 2000; Fritz, 1999). This environmental injustice takes on many different forms in many different countries, but includes the same themes: Settlements of lower socioeconomic status are disproportionately subject to the proximity of pollutant industries and waste disposal services; a lack of ecosystem services; a lack of adequate infrastructure; a lack of natural disaster management and insufficient access to emergency services (Rigolon, 2016:161; Heaney, et al., 2013:25; Patel, 2009:97; Beall et al., 2000:835; Fritz, 1999:178-179).

Proportionally important is that South Africa remains one of the countries with the most inequality in the world, with an GINI-coefficient of 63.4, last measured in 2011 (GINI Index (World Bank Estimate), 2016). This is a state of affairs that is by no means new – with this country's political history, it has been shrouded in unmatched levels of inequality in the distribution of wealth and resources for many decades (Beall et al., 2000:837).

What has to be understood, is that sustainability and environmental justice are not always compatible, where 'green' issues are often prioritised over human development and social justice (Ernstson, 2013:14; Patel, 2009:97). Marginalised communities have, in fact, often been displaced and disadvantaged in favour of creating natural spaces in the urban environment or for nature conservation in general (Storey, 2012:109; Cock, 2007:99; Carruthers, 2006:815;

Heynen, 2003:984; Beall et al., 2000:836). What's more is, people of colour and low socioeconomic status in South Africa have historically been excluded not only from decision-making processes regarding environmental issues, but have not been taken into consideration when it comes to environmental impact assessments (Scott & Oelofste, 2005:447). On the furthest end of this spectrum regarding environmental decision-making and stewardship, residents of low socioeconomic settlements have often been painted as perpetrators of environmental degradation by engaging in activities which are illegal, wasteful or polluting (Beall et al., 2000:883). In contrast, the poor and marginalised are often the de facto custodians of the environment, taking up jobs such as street cleaning and rag-picking, the need for which had been created by the environmental disregard of the rich (Storey, 2012:116).

This chapter will address the first study objective by looking at the nature and scope of environmental injustice in low socioeconomic settlements in cities, referring in particular to Khayelitsha, Cape Town (South Africa), whilst drawing appropriate parallels to similar settlements in South Africa and across the world. This literature review will investigate environmental injustice phenomena and apply it to the representative community of Khayelitsha, Cape Town. A case for such representation is made below.

3.2 Khayelitsha: A case for Representation

Khayelitsha is an African, informal, or low socioeconomic, settlement about 30 kilometres from Cape Town City Centre, bounded by the N2 to the North, Mitchell's Plain (a lower middle class community) to the West, and by the Indian Ocean to the South-East (O'Regan & Piloli, 2014:30).

There are several reasons why Khayelitsha is the ideal site to study environmental injustice in an African township of Cape Town, South Africa. Firstly, it is strongly associated with a history of injustice. Khayelitsha, meaning "new home" in IsiXhosa, was established in 1983 by the South African apartheid Government, as designated area to house African people in Cape Town (Seekings, 2013:1). This township had not only been established to house African people migrating to Cape Town from other parts of the country for work, but also with the intention of relocating the entire diffuse African population of Cape Town to this single locale (O'Regan & Pikoli, 2014:30; Seekings, 2013:7). From its inception, therefore, Khayelitsha had

been intended as an embodiment of apartheid policies, and has an undeniable association with inequality, oppression and the abuse of human rights (O'Regan & Pikoli, 2014:31; Seekings, 2013:3).

Secondly, Khayelitsha is also the most recently established African township in Cape Town, having been designed by the apartheid government, as opposed to African 'locations' such as Langa, which had come into existence before apartheid law enforcement (Seekings, 2013:3). This provides the opportunity for more exploratory and novel research, as there has been notably little research done in this area (Brunn & Wilson, 2013:290; Seekings, 2013:4).

Lastly, Khayelitsha is a community comprising of several 'subplaces' that, together, accounts for 10% of the entire population of Cape Town, and 27% of all African people living in Cape Town (Seekings, 2013:2-3; Strategic Development Information and GIS Department, 2013:2). As a single geographic community, therefore, Khayelitsha thus provides a large field of study. In this sense, Khayelitsha can be seen as a mass community, where there is no standardised mechanism for total integration (Johnson & Yanca, 2010:116). The 2011 Census offered an average of 400 000 residents (Strategic Development Information and GIS Department, 2013:2), but estimates range as high as 1.6 million (Brunn & Wilson, 2013:285).

Below is a geographical map of Khayelitsha and its surrounds (figure 3.1), from which can be seen its layout and boundaries.



Figure 3.1: Geographical map of Khayelitsha and surrounds (City of Cape Town CityMap Viewer).

3.3 A Profile of Injustice

As a means of ordering and presenting information on the nature and scope of environmental injustice in low socioeconomic settlements (as is evident in Khayelitsha) effectively, the Social Work intervention method of community work will be drawn upon. According to Johnson and Yanca (2010:115), a community is a social system, and the focus of community work is on the interaction and interdependence between individuals and their environment.

Johnson and Yanca (2010:121) developed a schema for studying a geographic community, based on what a Social Worker will need to concern herself with to understand any given community. This consists of setting, history, and demography, economic system, educational

system, human services system, socio-cultural setting, political system, and general consideration (Johnson & Yanca, 2010:120-123).

This resonates, and is in part based on, work done by Warren (1963:168) regarding the relevant functions of a community, including production, distribution and consumption, socialisation, social control, social participation, and mutual support.

Henderson and Thomas (2013:54) posit that a community profile should include information about the community's history, environment, residents, organisations, communications, power, and leadership. As is apparent, these dimensions or functions of a community are similarly defined by several authors, and thus provide an apt framework for collating information about a geographic community (see table 3.1). In this case, however, the interest lies with environmental injustice, and the community profile will be utilised to present community information relating to this phenomenon in particular.

Table 3.1: Comparison of community profiles/frameworks

Warren (1963)	Johnson & Yanca (2010)	Henderson & Thomas (2013)
	• Setting,	• Environment
	history,	• History
• Socialisation	Demography	• Residents
• Production-distribution- consumption	• Economic system	
• Mutual support	• Educational system • Human service system	• Organisations
• Social participation	• Social-cultural system	• Communications
• Social control	• Political System	• Power and leadership

As can be seen in the Table above, the different frameworks or styles of community profiles are very similar. Johnson and Yanca's schema (2010:118) will be used in this analysis, as it is most descriptive and comprehensive. The subcategories seen below (3.1-3.6), are thus as specified by these authors (Johnson & Yanca, 2010).

3.3.1 Setting, history, demography

In their seminal work first published in 1980 on understanding and working in neighbourhoods, Henderson and Thomas (2013:55) emphasise the importance of understanding the physical setting and environment of a community, including its boundaries, population, infrastructure, natural resources, recreational facilities, and the resident's usage of all these. In addition, understanding the history of a given community has been under-emphasised in the literature, but is essential in placing the residents and current events in context (Henderson & Thomas, 2013:54).

3.3.1.1 Physical setting

'Townships', as they are called in South Africa, or low socioeconomic settlements, are by far not only a single problem in this country, but seems to be an ongoing, intractable phenomenon (Mels, et al., 2009:330). Since the year 2000, the global population of inhabitants of low socioeconomic settlements have risen by 55 million people (UN-HABITAT, 2015). Sub-Saharan Africa is, however, the region in the world with the highest prevalence of low socioeconomic settlements (Givens, 2015:109). These low socioeconomic settlements face a whole host of social issues, such as poverty, unemployment, lack of access to infrastructure, inadequate housing, and crime - numerous factors which combine to ensure a cycle of poverty from which residents of such settlements rarely escape (Graham & Ernston, 2012:37; Brandt-Rauf, 2010; Scott & Oelofse, 2005:450).

As a matter of fact, urban environments do not merely come into existence organically, but are socially produced, and where such a social production occurs, there will inevitably be injustice and an unequal distribution of environments (Heynen, 2003:980). Although South Africa is not unique on the continent regarding its fate of colonialism, its continued history of racial divides and subsequent settlements and migration patterns had left the country with a deeply unequal and slanted urban setting (Shortt & Hammett, 2013:616). Apartheid legislation, such as the Group Areas Act (1950), brought about the forced removal of African and other non-white citizens from city centres, establishing poor and marginalised settlements on the peripheries of society (Jürgens, Donaldson, Rule and Bähr, 2013:256; Scott & Oelofse, 2005:449). The aim was, in fact, to settle African people as far as possible from white residential areas, and dividing these settlements from the city centre by means of natural and physical barriers (Smit et al., 2016:199; Jürgens et al., 2013:257). These historic

factors are now compounded by the effects of urbanisation due to globalisation, and for this reason, people continue to migrate to urban centres (Ndikumana, 2015:8; Brunn & Wilson, 2013:286).

These geographical factors which make informal settlements in South Africa what they are, have a great number of implications in terms of environmental injustice. One such implication is that inhabitants of informal settlements have to go to a great deal of effort and time to commute to their places of work (Du Toit & Neves, 2007:17). With the lack of sufficient road-related infrastructure, reliable public transport and great distances from home to work, this commuting process can become a great financial, physical and psychological burden to inhabitants of informal settlements (Du Toit & Neves, 2007:17). There is, for instance, only five entry roads or arterial roads leading into the entire Khayelitsha settlement, and access is therefore limited, as well as traffic strained (O'Regan & Pikoli, 2014:30-31). Many sections of Khayelitsha, especially the informal housing, are entirely cut off from any significant road networks (Dixon & Ramutsindela, 2006:135). To be specific, residents of low socioeconomic settlements simply do not have access to the same environmental goods as do middle/upper-class neighbourhoods (Smit et al., 2016:200).

Khayelitsha is situated on the Cape Flats, where the majority of low socioeconomic settlements in Cape Town are located, and this is an expanse of sand dunes next to the False Bay coastal region, filled with Cape Flora, but not at all suitable for housing and agricultural use (Graham & Ernston, 2012:37). Natural vegetation in general provides a great deal of physical stability and protection in living areas, such as helping to control rainfall flooding (Heynen, 2003:985). What's more, a variety of ecological systems will ensure that a living environment is increasingly able to resist common stressors and disastrous environmental events (Heynen, 2003:992). However much of the natural vegetation of the Cape Flats area had been cleared in order to resettle African communities during apartheid (Graham & Ernston, 2012:317).

Moreover, it is widely recognised that the poor suffer first and worst from the effects of climate change (Drivdal, 2016:22; Cock, 2007:17). More than 80% of informal settlements in Cape Town, including Khayelitsha, are situated on wetlands or other low-lying areas which are prone to flooding, and this is worsened by the fact that most residents' homes have poor drainage and are built with inferior materials (Drivdal, 2016:21; Mels et al., 2009:332). Parts

of Khayelitsha and other informal settlements on the Cape Flats are prone to floods every winter, due to heavy rainfall in the area, as well as the high-water table (Drivdal, 2016:21). Besides the obvious implications this has for residents' vulnerability to natural disasters such as floods and heavy wind, it also contributes to high levels of everyday problems such as mould and damp, due to the conditions of the location of the settlements (Shortt & Hammett, 2013:621).

Equally important, highly urbanised areas cannot be sufficiently sustained by the natural environment, as the high population concentration exceeds the supportive capacity of natural systems and resources (Western Cape Department of Environmental Affairs & Development Planning, 2013:19). To illustrate, the benefits of trees and plants for human health and wellbeing are numerous and noted by many (Heynen, 2003:980). The areas where low socioeconomic settlements are located in Cape Town, however had been largely cleared of indigenous vegetation to make way for the resettlement of African people under apartheid law, stripping the benefits of nature for the people, as well as endangering several indigenous plant species (Graham & Ernston, 2012:317).

Heynen (2003:982) states that where trees grow and are permitted to endure in urban environments depend more on political economy than on ecological factors. When it comes to urban planning, there is no doubt that upper and middle-class living areas are favoured for the planting of trees, or that trees are permitted to exist by the actions of upper/middle-class landowners for their own consumption whilst informal or low socioeconomic settlements have been largely and deliberately cleared of vegetation to accommodate as many as possible dwellings (Heynen, 2003:983). It can even be noted that urban trees are the signposts of affluent neighbourhoods (Heynen, 2003:983; Heynen, 2002).

When it comes to urban planning and the planting of trees, the environmental justice cause falls once again behind issues of ecological sustainability, since the addition of urban trees are usually done in a manner to strengthen existing urban forests for ecological resilience, thus increasing the unjust distribution of urban greenery to benefit upper/middle class-areas (Heynen, 2003:993).

In addition, only about 22% of informal settlements in Cape Town are entirely accessible via trucks and large vehicles, which includes emergency vehicles (Mels, et al., 2009: 332). Furthermore, lacking formal planning has ensured the random layout of plots and little to no

surrounding space for vehicles to enter (Shortt & Hammett, 2013:618). Dense, largely unmarked streets and areas in Cape Town's informal settlements cannot be easily reached by emergency services in cases of fires. On the other hand, police and other public servants often feel reluctant to enter these areas due to difficulties in navigation (Brunn & Wilson, 2013:278).

What it really comes down to, is the compounding of risk factors. As described above, residents of low socioeconomic settlements are subject to worse environmental circumstances, leaving them vulnerable to natural phenomena and disasters. However, these residents also do not have the economic resources to mitigate the effects of such natural blows (Beall et al., 2000:835).

3.3.1.2 Historical Development

In South Africa, environmental injustice can be largely attributed to the spatial planning and policies of the apartheid era (Scott & Oelofse, 2005:449; Beall et al., 2000:837). Not only did this include forced removals of people of colour from designated 'white' spaces, but also the deliberate lowering of infrastructure standards for African settlements (Carruthers, 2006:808; Beall et al., 2000:837). The term "environmental racism" is often used as interchangeable with environmental justice (Steady, 2009:2), and Stull, Bell and Ncwadi (2016:1) go as far as to refer to a process of "environmental apartheid" in South Africa, a term to define the blatant marginalisation of racially specified groups which continues today, although legal apartheid has long since ceased.

In South Africa, as in the rest of the world (Steady, 2009:2), the burden of environmental problems is still unjustly carried by poor, mostly black citizens; a phenomenon which is largely influenced by (post)colonialism and the enduring legacy of apartheid (Scott & Oelofse, 2005:449; Hobson, 2004:478; Beall et al., 2000:883). Jürgens (2013:259) state that due to the political history of the country, it is impossible to consider the state and development of low socioeconomic settlements, without considering race.

As a result, according to Heaney et al. (2013:24), environmental injustice may occur due to the specific targeting of communities of colour, or due to factors such as historical land use, where poorly equipped land had been the only options available to people with little socioeconomic power. As it were in South Africa, there had been a historical underdevelopment, if not entire neglect, of the African communities due to the lower social

status afforded to this group under apartheid law, in addition to major transportation routes, industries, airports, landfills and power stations being located around these poor communities (Scott & Oelofse, 2005:449).

What's more, the apartheid government had created monopolies in all fields of industry (including railways, postal services, electricity provision, broadcasting, and air transport), largely to combat political sanctions, which resulted in a small set of agents having power over decision-making regarding the placement of industries and the demographic groups who would be most affected by it (Fig, 2007:230). Black workers were forced to migrate to urban centres for jobs where they had little rights and worked under difficult and dangerous circumstances (Fig, 2007:230-231).

The existence and proliferation of large informal settlements in Cape Town, including Khayelitsha, are often attributed to rapid urbanisation, and this is also the reason cited by government for lack of, or inadequate, service delivery (Human Settlements Directorate, 2014:15; Western Cape Department of Environmental Affairs & Development Planning, 2013:3). Ndegwa, et al. (2007:232), however, conclude that the natural migration and mobility patterns to Cape Town had been skewed due to the influx control policies and legislation of the Apartheid government. Therefore, if African citizens had not been prohibited to move to the city during the 1950's (most prominently via 'pass' laws), a more constant and manageable process of urbanisation would have taken place (Ndegwa, et al., 2007:232).

3.3.1.3 Demography

According to Johnson and Yanca (2010:121), the demography of a community will consist of its population, the physical structure (such as what housing is available), and mobility.

For instance, Khayelitsha is home to nearly to an estimated 400 000 people, and 99% of them are African people (Strategic Development Information and GIS Department, 2013:2). This is in line with recent historical development, as Khayelitsha had been designed as a neighbourhood designated for Africans (Seekings, 2013:1). It consists of 12 wards covering 28 'subplaces', as defined in the 2011 National Census (Seekings, 2013:4; Strategic Development Information and GIS Department, 2013:2).

In terms of housing available in the community, the Census counted a total of 120 000 dwellings, consisting of nearly one half formal houses, and just over half informal structures, or 'shacks', which are either found in the backyard of formal homes or are free-standing (Seekings, 2013:6). This is a significant proportion of informal homes, often noted as the most well-known characteristic of the community (see figure 3.2 below), and constitutes 38% of all of Cape Town's informal settlements (Seekings, 2013:6). As opposed to the greater Cape Town Metropolitan Area, where 78% of dwellings are formal, Khayelitsha is far behind in formalised housing (HDA, 2013:28).

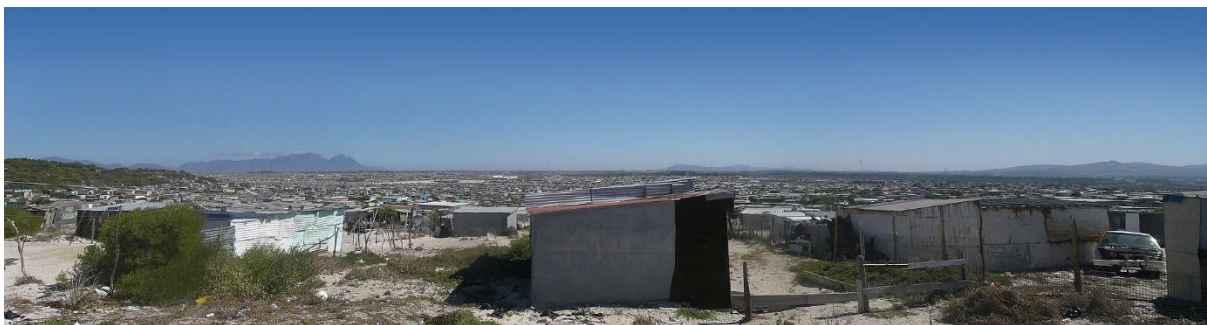


Figure 3.2: The expanse of informal housing in Khayelitsha

(Image by KennyOMG - CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=6687989>)

When it comes to infrastructure available to the population of Khayelitsha and other informal settlements around Cape Town, there is a grave difference from more affluent/ middle-class neighbourhoods (Brunn & Wilson, 2013:286; Storey, 2012:116; Mels et al., 2009:331). Access to clean water is one environmental resource which is lacking in the low socioeconomic settlements of South Africa (Cock, 2007:94). Even in cases when the infrastructure had been provided for public drinking water and sewage, residents living in low socioeconomic settlements can often not afford to pay cost related to installation, such as construction and tap fees to connect to the mainlines (Heaney et al., 2013:32).

Furthermore, the majority of Khayelitsha residents have roots in the Eastern Cape, as most adult residents of the community migrated from the Eastern Cape province to live there (Seekings, 2013:1). What various rounds of census and survey data found, however, is that although Khayelitsha largely remains an immigrant community today, the influx is not as high as it is generally supposed, since many unemployed residents move back to the Eastern

Cape for long periods during the year, and many other moved to other low socioeconomic areas around Cape Town in order to get access to government housing (Seekings, 2013:12).

3.3.2 Economic system

How many people are employed, what kind of people are employed, what kind of jobs are available, what industries are prevalent, and what the long-term stability and security of the economic system is, are all important considerations to take into account when gathering information on communities (Henderson & Thomas, 2013:55-56; 58). When it comes to investigating the nature and scope of environmental injustice, however, these factors will be explored in terms of the environment and in particular, how it is unjustly distributed to Khayelitsha and the informal settlements of Cape Town.

3.3.2.1 Industries

Across the world, it has been found that environmental hazards, such as polluting factories and waste treatment plants, are disproportionately located near communities of colour or lower socioeconomic status, or that the latter are disproportionately situated in proximity to the former (Heany, et al., 2013:24; Schoolman & Ma, 2012:141; Sorey, 2012:113; Patel, 2009:97). This has been the case even when studies have controlled for income (Schoolman & Ma, 2012:141). Hobson (2004:474) indicates that empirical evidence supports environmental justice arguments in that marginalised people are subject to a greater deal of pollution and negative environmental impacts.

As mentioned before, apartheid saw to the placement of industries around African settlements, or forced African workers to settle close to it for jobs (Fig, 2007:230). This had severe negative environmental consequences for these people, such as in the case of Merewent, Durban, where communities had been enveloped by petroleum refineries and other pollutant industries, with mercury and asbestos poisoning as prominent result (Fig, 2007:231). It should be noted that big companies often target the placement of large industries close to low socioeconomic settlements because residents of such communities have less political power to resist decisions which may have harmful environmental effects, such as pollution in their living area (Couch, Williams, Halvorson & Malone, 2003:237). This may be because such communities situated near industries which could cause harmful

pollution, often lack the social capital related to institutional access in order to investigate contamination levels in their area (Heany, 2013:24).

Pollution, and especially air pollution due to industry, has been one of the more cited features of environmental (in)justice (Steady, 2009:2). In South Africa, where the incidence of air pollution is amongst the highest on the planet, the biggest share of negative health outcomes due to air pollution is carried by low socioeconomic communities (Wright, Oosthuizen, John, Garland, Albers & Pauw, 2011:12). The quality of coal in South Africa is very poor, and the pollution resulting from its use as fuel in factories causes high levels of respiratory disease amongst residents (Fig, 2007:235). Nuclear energy is hailed and supported as the best alternative, as much resources still go into the Koeberg Nuclear Reactor in Cape Town, offering low cost energy to bulk users (large industries), while the poor are paying uniformly more for electricity (Patel, 2009:100; Fig, 2007:236-237).

The case is no different in Khayelitsha. The most common of the so-called 'greenhouse gases', which are harmful to the planet and human health, is Nitrogen Dioxide (NO₂), and levels of this gas has been found to be elevated in Khayelitsha (Western Cape Department of Environmental Affairs & Development Planning, 2013:9). This is largely ascribed to the rapid rate of urbanisation in the area, as well as to the dependency of residents on road transport (Western Cape Department of Environmental affairs & Development Planning, 2013:9). The pollutant levels measured in Khayelitsha is not only found to be higher than the rest of the City of Cape Town, but are also widely regarded to be above acceptable standards for health and safety (Western Cape Department of Environmental Affairs & Development Planning, 2013:26).

3.3.2.2 Employment

Labour market opportunities are influenced by the environment, in the sense that the physical environment will provide different degrees of physical accessibility to places of work, as well as what type of work is available in a given community (Du Toit & Neves, 2007:17). When it comes to Khayelitsha, the population has been historically hindered from accessing employment opportunities in the Cape Town Metropolitan Area, due to apartheid legislation like the so-called 'pass laws' and the Coloured Labour Preference Area Policy (1983), which had made the coloured population first choice in any unskilled employment (Ndegwa, et al., 2006:224).

To demonstrate, Khayelitsha is in many ways an economic and political reserve, since it is located more than 30 kilometres from the city centre and therefore far away from retail and manufacturing job opportunities (Du Toit & Neves, 2007:17). In addition, Du Toit and Neves (2007:16) state that there are a number of other factors relating to migration from the Eastern Cape that exclude residents of Khayelitsha from the job market, such as the inability of many residents to speak either English or Afrikaans. This had been found to be true for many residents who have had more than a decade of schooling (Du Toit & Neves, 2007:16).

For residents, Khayelitsha's relative proximity to Cape Town (as compared to the Eastern Cape), is a double-edged sword. Although they are closer to job opportunities in the city centre than they would have been in rural areas, they are here at the mercy of fluctuations in the economy, as there are no options for subsistence farming or supplementary agricultural activities, due to the poor quality of the land and density of the settlements (Du Toit & Neves, 2007:20).

According to the 2011 Census, Khayelitsha has an unemployment rate of 40%, being most severe among young adults (Seekings, 2013:15-16; Strategic Development Information & GIS Department, 2013:2). Ndlela (2011:11) also associates high numbers of poverty and unemployment with continued protest in informal settlements since 2004.

3.3.2.3 Distribution-consumption

Heynen (2003:981) postulates that humans metabolise nature and natural resources, just as any other organism found on the planet, however, it cannot go uninfluenced by cultural, economic and political practices which govern life on earth (Heynen, 2003:981). This leads to the social production of urban environments by the use of natural resources, and where there is a social order, inequalities are bound to occur (Heynen, 2003:980). To such an extent that the decisions of those who have power over production, consumption, and exchange by means of access to resources, will create and re-create uneven urban environments (Heynen, 2003:980). This is to say that those agents with access to various resources, whether it be economic or social, will determine how such resources are spent to shape physical environments.

Although the addition of environmental hazards and the subtraction of environmental resources that constitute environmental injustice as seen in the literature are profound, the issue goes beyond that. These unequal environments that are created also leave its residents

vulnerable to the forces of nature and changing natural patterns (Cock, 2009:17-19). The end result of this is the compounding of factor to leave the poor in constant detrimental circumstances and a poverty trap (Graham & Ernston, 2012:37; Brandt-Rauf, 2010; Scott & Oelofse, 2005:450).

3.3.3 Educational system

In investigating the educational system of a given community; the structure, administration, financing, infrastructure, students, instructors, extra-curricular activities, and community relations can all be evaluated (Johnson & Yanca, 2010:122). In this review, however, there is a particular focus on those factors listed here on which environmental injustice may have an influence.

Spaull (2013:1) found that South Africa has a dual education system – 25% of the wealthiest schools offering students the exceptional opportunities and resources to excel, and the other 75% of schools with a quality of infrastructure and resources far below standard. This produces an inaccurate picture of the average student in the country, as the poor, dysfunctional public schools in low socioeconomic communities are unable to equip students effectively (Spaull, 2013:14).

According to Seekings (2013:11), education has been the focus of large-scale and ongoing service delivery in Khayelitsha, and the community had a count of 33 public primary and 19 secondary schools in 2013, as well as very few private schools. The author goes on to note, however, that several of the newer and larger subplaces that are entirely informal, such as Enkanini, have no schools whatsoever, and children have to travel great distances to receive an education (Seekings, 2013:11). According to the 2011 Suburb Census of Khayelitsha's population (Strategic Development Information and GIS Department, 2013:3), this will mean that there are 1, 920 primary school-age children per available public primary school, and 4, 411 young people per secondary school.

Although very little formal research is available on the subject, the quality of public schooling in Khayelitsha has been the topic of much debate in the past decade, with the non-governmental organisation, Equal Education leading protests and discussion on the discrepancy between the quality of infrastructure and standards in former Model C schools in the city, and public schools in Khayelitsha (Gontsana, 2013; Jones, 2011). According to this

advocacy, organisation and residents of Khayelitsha, many of the public schools here have very poor infrastructure, such as lacking or dysfunctional bathrooms and libraries, and poor access to resources, such as textbooks (Gontsana, 2013; Jones, 2011).

According to the 2011 Census, only 36% of Khayelitsha residents aged 20 and above have completed secondary school (Strategic Development Information and GIS Department, 2013:2). In addition, 22.5% of Khayelitsha adult residents are functionally illiterate (Cole, 2007:3). This is far above the national illiteracy statistic of 16.2% of adults 15 years and older (Statistics South Africa, 2014:24).

3.3.4 Human service system

As with other organisations and institutions in communities, the human service system must be scrutinised to see what resources it yields for residents, as well as the impact it has on resident's lives (Henderson & Thomas, 2013:58). This will include the actions and interactions of health care services, the formal social welfare system, and the informal helping system (Johnson & Yanca, 2010:122-123).

It is important to note that residents of Khayelitsha generally place little trust in public servants, and are overall dissatisfied with public services in their community. This is as much true when it comes to refuse collectors, as when it comes to doctors and nurses (Seekings, 2013:24-26). This attitude has been expressed in a series of protest regarding insufficient service delivery in Khayelitsha and other low socioeconomic settlements, starting in 2004 (Ndlela, 2001:3).

3.3.4.1 Health care services and institutions

During Khayelitsha's development, it rapidly acquired health care infrastructure, now hosting a hospital and several Community Health Clinics (Seekings, 2013:11). However, the quality and efficacy of these institutions must be brought into question, as Khayelitsha is the sub-district of Cape Town with the worst health indicators and outcomes (Smit, et al., 2016:198).

Lack of road and architectural infrastructure in Khayelitsha (as seen in Figure 3.4 of the densely populated area), especially the most informal areas, makes it difficult to respond appropriately and swiftly in emergency situations (Mels, et al., 2009: 332). Not only does this result in insufficient response to hazardous situations when it is needed most, but the lack of

emergency response and appropriate care worsens the impact of any inadvertent harm, whether it be a small accident or a large-scale disaster (Bull-Kamanga et al., 2003:197).



Figure 3.3: Density of housing

(Image by Chell Hill, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=15693745>)

3.3.4.2 Formal and informal social welfare system

Makhulu (2010:570) argues that the Reconstruction and Development Plan (1994), which had been dissolved in 1999, was the last vestige of a formal welfare plan to be seen in Khayelitsha. This had been the only policy to specifically address poverty and social development in previously disadvantaged areas, and had received a great deal of grassroots support (Makhulu, 2010:571).

The Department of Social Development's (DSD) district offices are situated near the centre of Khayelitsha's newly defined central business district, offering several services, centred around generic social case work, grants distribution and poverty alleviation (Cole, 2007:14). However,

these offices are highly stressed, overstretched and under-resourced to provide all of these services to the entirety of Khayelitsha (Cole, 2007:vii).

The government's greatest currently functional role in social development in Khayelitsha, is the provision of state grants (especially the Child Support Grant), which has been found to show a decline in poverty (Seekings, 2013:13). This is significant, as the steady reliable monthly income that grants provide, is a relied upon by many households to ensure their livelihoods (Cole, 2007:vi).

According to the Department of Social Development's directory of services to children and families in the Western Cape (2010:46-128), there are 36 Non-Profit Organisations (NPOs) that offer welfare services in Khayelitsha. These services are set out in Table 3.2 below. Although a wide range of services are covered, there are only a total of 36 organisations providing services to the whole of the community, and this is a mere 8% of helping services listed for the whole Cape Town Metropolitan Region. This is problematic, since Khayelitsha accounts for at least 10% of the Cape Town Metropolitan population, even by the most modest and contested of estimates (Seekings, 2013:2-3).

Table 3.2: Type and quantity of NPOs in Khayelitsha

<i>Type of NPO</i>	<i>Number of organisation in greater Khayelitsha</i>
<i>Educare facilities</i>	8
<i>Home-based and palliative care</i>	4
<i>Education and skills development</i>	3
<i>HIV/AIDS</i>	5
<i>Faith-based organisations</i>	6
<i>Sports development</i>	1
<i>Trauma and counselling services</i>	5
<i>Nutrition support</i>	2
<i>Residential children's homes</i>	2
Total	36

3.3.5 Socio-cultural system

Reviewing the socio-cultural system of a community is important to understand what resources it makes available there, and to measure the impact it might have on residents (Henderson & Thomas, 2013:59-59). When completing a Social Work profile of the community, it is also essential to understand how news, information, and ideas are circulated throughout the community (Henderson & Thomas, 2013:59).

3.3.5.1 Recreational-cultural activities

An element which is more difficult to quantify and often overlooked, is the lack of opportunities for business and recreation in informal settlements, due to a lack of both infrastructure and natural spaces (Shortt & Hammett, 2013:617). Public parks and commons is a set of environmental goods lacking in low socioeconomic communities, including in South Africa and specifically Cape Town (Smit et al., 2016:200; Parsons et al., 2015:286). Parsons et al. (2015:295) have noted that where parks do exist in low socioeconomic communities, it is often times surrounded by unhealthy food and retail establishments, high crime sites, and traffic intensive areas. Smit et al. (2016:200) adds that the more “formal” areas of a low socioeconomic settlement in Cape Town, Khayelitsha in particular, do have a number of parks and sports facilities, but the majority of these are poorly maintained and viewed as dangerous by inhabitants because of vandalism and popularity with drug users.

3.3.5.2 Ethnic, racial and other diverse groups

Although the population of Khayelitsha is predominantly Black African (99%), there is a growing diversity in ethnicity (Strategic Development Information and GIS Department, 2013:2). In the past decade, South African has experienced a great influx of immigrants from neighbouring countries as refugees or seeking better living circumstances, and with this, there is also the perception of locals that these foreigners are bribing corrupt state officials and taking up local job opportunities (Bekker, Eigelaar-Meets, Eva & Poole, 2008:41). This has led to great bouts of xenophobic violence in Khayelitsha, as in many other low socioeconomic settlements, as this is where these refugees ultimately end up and can afford to live (Bekker et al., 2008:19). The South African Police Service has declared Khayelitsha one of four ‘hotspots’ for xenophobic violence, with a record of 38 Somali business people killed in 2006 (Bekker et al., 2008:19).

According to McConnel (2009:34), xenophobia is inextricably linked to the legacy of apartheid, as residents of low socioeconomic settlements, who had suffered great injustices and human rights violations under apartheid law, now feel that their freedom and rights must be protected from 'outsiders'.

3.3.6 Political system

When investigating the political institutions of any given community, one must pay attention to the nature and extent of its services, its structures and policies, its impact on the community, what resources it brings, and the relationship between political structures and the community members (Henderson & Thomas, 2013:58). Here, the researcher or Social Work practitioner must also gather a great deal of information on power and leadership within the community, and explore how it influences residents (Henderson & Thomas, 2013:60)

3.3.6.1 Structure and functioning of government

Khayelitsha falls under the governance of the City of Cape Town, a municipality which is governed by the Democratic Alliance, South Africa's largest opposition party (Strategic Development Information & GIS Department, 2013:1; Democratic Alliance, 2017).

Tonkiss (2013:99-100) explains how low socioeconomic settlements or 'townships' in South Africa, such as Khayelitsha, are in itself an environmental injustice, when it comes to considering how it is perceived, as opposed to affluent, gated communities. South Africa ensures freedom of movement and universal housing under the Constitution (108/1996), and both gated communities and informal settlement are driven by the desire for autonomous living in a secure environment under these auspices (Tonkiss, 2013:99). However, informal settlements are technically seen as land invasions, which are prohibited by the state, while gated communities are legitimated by government, although it repudiates certain groups of people's freedom of movement and impedes the vision of a unified city.

3.3.6.2 Law enforcement

Seekings (2013:24) notes in his review of census- and survey data, that most residents of Khayelitsha place very little trust in the police, and feel disappointed with law enforcement in general. This can be understood in the sense that the community seems to be highly

underserved when it comes to law enforcement – there are only three police stations for the entirety of Khayelitsha, housing more than 400 000 residents (Seekings, 2013:4).

Dan Plato, Western Cape Minister for Community Safety, called the South African Police Service to task on 10 July 2013, when he made a statement of poor police-to-population ratios in the province (Western Cape Department for Community Safety, 2013). In this statement, he notes that the national average is one police officer to every 303 citizens, but in Khayelitsha this ratio is 1:1675, and in the sub-district of Harare, the ratio is 1:1703 (Western Cape Department for Community Safety, 2013).

According to O'Regan and Pikoli (2014:35), Khayelitsha has a history of police forces being complicit in achieving the goals of the apartheid government and social control, and attributes the mistrust of the current-day South African Police Services by community members to the burden this history imposes.

3.3.6.3 Infrastructure and service delivery

There has been a great propagation of informal settlements throughout the global South, due to the rapid urbanisation across the globe, and this rapid spread has been unmatched by governments' capabilities to ensure sufficient planning for infrastructure and service delivery (Shortt & Hammet, 2013:616; Beall et al., 2000:835). In Cape Town, the majority of informal settlement residents are migrants from the Eastern Cape, moving closer to this urban centre in the search of economic opportunities (Mels et al., 2009:333).

What is evident from the global discourse around informal settlements is the universal motivation to 'eradicate' such settlements or slums, due to the lack of basic amenities available to residents (Shortt & Hammett, 2013:616; Mels et al., 2009:331). In South Africa, this has certainly been the rhetoric, with the added promise of formal housing and basic services, such as water, sanitation and electricity for all, with a strong environmental emphasis in the Reconstruction and Development Plan of 1994 (Carruthers, 2006:805; Beall et al., 2000:883). Shortt and Hammett (2013:616) note, however, that the complete abolition of informal settlements ignores the rich social networks and needs of residents for a sense of community which has already been formed in these settlements.

The South African Government has come to admit that townships in the country are no longer temporary structures, but permanent settlements for which long-term solutions and service

delivery must be planned (Shortt & Hammett, 2013:617). Although there is no longer any doubt regarding the foreseeable permanency of townships in the country, there continues to be a great lack of infrastructure and services in these areas (Brunn & Wilson, 2013:286; Storey, 2012:116; Mels et al., 2009:331). Although there are numerous facets of infrastructure and services, the review of literature on environmental injustice refer in particular to water and sanitation, which the main theme of investigation here.

In response to the need offering permanent services to township dwellers, the policy of the post-apartheid government has largely been cost recovery, such as by means of installing pre-paid water meters, with the implication that poor residents cannot afford to pay water rates, resulting in negative community relations, poor health outcomes, and domestic conflicts (Cock, 2007:94-95).

Moreover, the informal settlements of Cape Town are far behind when it comes to the implementation of adequate sanitation facilities as well, with only 36.5% of residents having access to basic sanitation in 2009 (Mels et al., 2009:330). The reasons for this are as complex as any other issue, but recent studies have indicated that obstacles to adequate implementation of sanitation services relate mostly to the location of informal settlements, and the unsuitability of these locations, which are either on private land where no structural change can be brought to fruition, or because of the physical character of the land being either wetland or prone to flooding (Mels et al., 2009:330). The City of Cape Town offers formal sanitation in the form of container toilets in informal settlements, where one toilet is shared between five households, and maintenance must be undertaken by the users, which poses issues of distribution of responsibility and fair use (Mels et al., 2009:332).

In fact, sanitation is a controversial topic of discussion when it comes to the informal settlements of Cape Town, especially Khayelitsha. According to the 2011 Census, 72% of houses in Khayelitsha have access to piped toilets connected to the sewerage system (Strategic Information Development and GIS Department, 2013:2). This means, however, that one in four houses do not have access to a working toilet, and it is also noted that many of these toilets are situated in communal spaces, are unsafe, and poorly kept (Seekings, 2013:9). Since 2010, there has been a series of protest relating to the provision of adequate sanitation facilities in Khayelitsha, as the City Council had not fully delivered on its promise of adequate flush toilets, and also required residents to enclose and maintain those the City had provided

themselves (Feris, 2013:879; Seekings, 2013:9). Feris (2013:879) notes that this situation highlights the lack of access to adequate sanitation in informal settlements, as well how this indignity is suffered only by those on the lowest end of the socioeconomic spectrum in South Africa.

Using Johnson and Yanca's (2010:120-123), this section has used the components of a community profile to delineate environmental injustice in Khayelitsha, Cape Town – an urban, low socioeconomic settlement in South Africa, as a way to investigate environmental injustice holistically on a community level.

3.4 Conclusion

This chapter has examined the various cases of environmental (in)justice throughout the world, as well as the underlying forces which drive the phenomenon, which comes down to an intricate nexus of politics, race and economic status. In South Africa, the picture has become even murkier with the strained history of colonialism and the apartheid regime, now perpetuated by the pressures of globalisation and economic growth. Deepening inequality continues to drive the issue, which manifests itself in the clearly skewed distribution of natural and man-made environmental resources and hazards. The residents of low socioeconomic settlements in the country are subject to several environmental dangers and live with a lack of access to environmental resources, resulting in increased vulnerability on personal and social scale.

Using the township of Khayelitsha as representation for informal settlements in Cape Town, the nature and scope of environmental injustice has been presented according to the scheme of a community profile, which is an essential tool in Social Work analysis, research and community work practice. The literature study, set out according to this scheme, has found that environmental injustice occurs within all spheres of the Khayelitsha community, and can be compared to other informal settlements or African townships in Cape Town, South African, and across the globe.

CHAPTER 4:

EMPIRICAL INVESTIGATION INTO ENVIRONMENTAL INJUSTICE AS EXPERIENCED BY RESIDENTS OF A LOW SOCIOECONOMIC SETTLEMENT

4.1 Introduction

In line with objective 3 of this study, the following chapter will present the findings of the empirical investigation into environmental injustice as experienced by residents of a low socioeconomic settlement. The chapter is divided into five sections, namely this introduction, the research method, results of the study, a critical reflection on the empirical findings, and a conclusion.

The section on the research method will outline what steps has been followed in the empirical study, detailing particulars on execution and main considerations. In comparison to the information contained regarding the research method in chapter 1, this section explores steps taken during the research process, and documents actual implementation of these steps.

The next section, results of the study, presents the findings of the empirical investigation. This involves a structured analysis of interview data, which has been analysed as narratives from an Anti-Oppressive perspective. The findings are presented according to the themes, sub-themes and corresponding categories that had been identified in the narratives of participants. These findings are then also compared to existing literature as control, and where appropriate, supported by existing literature.

The final section before the conclusion of the chapter involves a critical reflection on the empirical findings, in which the researcher evaluates the investigation for trustworthiness as a qualitative study; consider its limitations, and reflects on personal biases that may have impacted the interpretation of data and this report.

The aim of this chapter is to both present the findings of the investigation, as well as provide detail to establish trustworthiness in the research. The following sections are constructed in a manner to achieve this aim.

4.2 Research Method

This section of the research report will offer an exposition of the research method employed in this study. With this, the researcher aims to provide a transparent and thorough account of the research process and procedures followed, in order to establish credibility (De Vos, et al., 2011:428). This detailed documentation seeks to mitigate potential pitfalls associated with the integrity of qualitative research (Neuman, 2000:474).

4.2.1 Sample

With the aim of investigating environmental injustice as experienced by the residents of a low socioeconomic settlement (the population of the study), the researcher included the selection of a subset of the population with whom to conduct the study (Carey, 2009:46; De Vos, et al., 2011:391). The below sections include an account of the sample size, method, and criteria, as well as how the participants in the sample had been recruited and selected for the study.

4.2.5.1 Sample size, method and criteria

As delineated in Chapter 1 of this research report, the criteria for inclusion in the research sample were that the participants must be:

- a resident of the informal settlement (township) where the study will take place,
- able to communicate in English, and
- 18 years or older.

These criteria were formulated as such in order to allow for a variety of views from anyone who can be deemed a 'resident' of an urban informal settlement, while ensuring ethical practices.

There are no strict thresholds for sample sizes in qualitative research studies; as the scale of the sample will depend on the aim of the study, its context, what type of information would be useful; how much time and resources are available to the researcher, and requirements regarding credibility (Patton, 2002:244, De Vos, et al., 2011:391).

In this study, 15 participants were identified in the initial sample, including those for the pilot study. According to Carey (2009:47), qualitative studies very often involve less than 20 participants, as the goal is to gain detailed understandings and thick descriptions, rather than

several accounts of disjointed data that may not offer insight into unexplored social phenomena.

4.2.1.2 Recruitment and selection

Participants had been recruited for this study by enlisting the assistance of fieldworkers working in the site of the study (an urban informal settlement), for a non-profit organisation. The management and fieldworkers were engaged to assist in this recruitment on a voluntary basis, and none of the clients of the organisation had been included as viable candidates for recruitment, as to ensure ethical compliance, and to protect the beneficiaries of the organisation.

Institutional permission (Appendix 1) was sought and received from the organization when the research proposal had initially been submitted for ethical approval from the Research Ethics Committee of Stellenbosch University. After ethical clearance (Appendix 2) had been received for the study and the literary review completed, the researcher contacted the organisation to arrange meetings with staff regarding access to the community. The staff members were very helpful in arranging meetings with several potential participants, and agreed to avail office space on their premises in Khayelitsha where the interviews could take place. This was in an unmarked building.

4.2.2 Research Approach

From the outset of this study, a qualitative approach had been the most appropriate option to guide and define the research. As qualitative research seeks to investigate social phenomena as it naturally occurs, as well as the meaning attributed to these phenomena by the humans who experience it, the qualitative approach is best suited to discover and explore topics that are novel, complex, or lacking description (D'Cruz & Jones, 2014:64).

The topic of environmental injustice has been rarely touched on in the field of Social Work, and even less so by South African practitioners (Marlow & Van Rooyen, 2001:241; Jarvis, 2013:40). In fact, the impact of the physical environment on social functioning and social development has been largely excluded from Social Work research and practice, in favour of considering the complex influences of the social and economic environment (Marlow & Van Rooyen, 2001:241; Coates & Gray, 2012:232). This being the case, a Social Work investigation

of the topic of environmental injustice necessitates exploration and in-depth description, undeniably qualifying it for qualitative scrutiny.

4.2.3 Research Design

Furthermore, in building on the strong foundation provided by the qualitative approach to social research for discovery, the research design and instrument for data collection necessitated options that would leverage the possibilities of qualitative data. A combination of exploratory and descriptive research designs was thus chosen, as an exploratory design element would offer the best vantage point on a novel topic (Marlow, 2005:334; Strydom, 2013:151-152), while its descriptive counterpart would offer the benefit of collecting thick and in-depth descriptions (Marlow, 2005:333; Strydom, 2013:153).

4.2.4 Instrument for Data Collection

Within the qualitative framework and the lenience of the combined research design, the instrument of choice for data collection was determined to be a semi-structured interview schedule (Appendix 1), which was then utilised during in-person interviews with research participants. As De Vos et al. (2011:351-353) had forecasted, the advantage of using this instrument in data collection was twofold. It allowed the researcher to ensure that the same areas of interest were addressed with each participant, yet it also allowed for a great degree of freedom on the part of the participants to provide detailed descriptions and rich recounting of their lived experiences.

The questions for the semi-structured interview schedule had been formulated after analysis of the findings of the literature review, which is outlined in Chapter 2 and 3 of this report. The structure and greater part of guidance for the interview schedule and its constituent questions had been drawn from Chapter 2, as it outlined what evidence does exist for the impact of the environment on people's social functioning and development, and does so through an Anti-Oppressive perspective, as to identify potential areas of injustice. However, the literature review of the nature and scope of environmental injustice in low socioeconomic settlements in cities (Chapter 3) had also provided insight into potential sites for the experience of the phenomena, and for this reason, findings from this chapter had also been used to further articulate the interview questions.

Due to large scope of environmental injustice and the lack of research on the topic within Social Work, the interview questions had purposefully been kept open-ended and exploratory, in the hopes of eliciting vivid and rich descriptions from participants. This had also been done to allow for deep exploration, in the sense of allowing participants' narratives to reflect their whole lived experiences around the topic, and not only what had been anticipated to be encountered based on the literature. The questions were categorised according to common human needs, as outlined in Chapter 2, and then grouped on the personal, cultural and structural levels of analysis within the Anti-Oppressive approach in Social Work (Thompson, 2016:35-36).

Each interview had been audiotaped (with the consent of the participant) and transcribed for data analysis.

4.2.5 Pilot Study

After the antecedent steps had been completed, a pilot study was implemented in order to test the semi-structured interview schedule as data collection instrument (Persaud, 2010:1032). According to De Vos et al. (2011:394), the pilot study is a crucial element of the research process to determine whether the data collection instrument is appropriate and effective, as well as whether any adjustments should be made for participant accessibility.

In order to obtain an accurate reflection of the semi-structured interview schedule's appropriateness and efficiency, the participants included in the pilot study must mirror the sample of the larger research study, as delimited in 2.2.1 (Persaud, 2010:1032). Two participants were recruited in the same manner as explained in 2.2.2, interviewed according to the determined process, and extensive notes taken of the responses to the schedule.

The results of this pilot study led to the removal of one question from the interview schedule, which had been confusing to participants, as well as the formulation of several standard prompts which were used across the board with participants to ensure that they were encouraged to give information in a similar way.

2.6 Data Collection

The various considerations related to data collection had been measured and planned from the outset of the study until the gathering of information from participants, and after in the reflection of how data collection may have influenced the data obtained. The following

section reviews and documents data collection for this, as to provide evidence of best practice followed and transparency in research.

4.2.6.1 Informed consent

Before the initiation of all interviews, the researcher sought informed consent from each of the participants. This had been done by means of presenting a standard Informed Consent Form for this study (Appendix 2), and engaging in a discussion with each participant regarding the content of the form, as well as its implications. Each participant was asked whether the particulars were clear to them, where after both participant and researcher signed the form, and the participant was provided with a copy for their own information.

As proposed by De Vos et al. (2011:117), the Informed Consent Form includes sections that delineates the aim of the study, the expected length of time for an individual interview, the process to be undertaken in the research, the potential risks and benefits of participating in the study, and the standing of the researcher.

During the discussion of informed consent, the researcher also asked each participant whether they would be comfortable if the interview was recorded for the purposes of accurate data documentation and analysis (De Vos et al., 2011:359). The researcher explained that the audio recordings would be transcribed for data analysis, and thereafter it will be stored securely, and will only be accessible by the researcher or the academic supervisor.

4.2.6.2 Participant interaction

Only one of the participants, Participant number 13, indicated that they did not feel comfortable with being recorded. In this case, detailed interview notes were taken during the interview. Since these notes are not verbatim, it was not relied upon for narrative evidence to support themes, but rather to corroborate themes that had also been identified from other interviews.

4.2.7 Data Analysis

Riessman (2001:73) very aptly states that the wide-ranging field of Social Work is held together by a core dedication to promoting and supporting both social and economic justice, in all of its subgenres. In this sense, Social Work research can participate in the promotion of the above-mentioned key ideals by investigating and documenting what violations of social

and economic justice do exist in the lives of individuals, and how the various arms of the profession can address it (Riessman, 2001:73).

Taking a narrative-centred approach to data analysis reveals valuable information about historic and social processes, as narratives are created where individual lived experience, society, and human history meet (Riessman, 2001:74). This resonates strongly with the longstanding sociological tradition of identifying and articulating social issues through the lens of personal problems (Mills, 1959:3-5).

Data analysis for this study thus took the form of scrutinising the narratives of participants to identify common themes, and then investigating those themes to find layers of underlying commonality (sub-themes then categories). This had been done by an analytical method, following the below steps, as delineated by De Vos et al. (2011:410-418):

- Naming and conceptualising of common phenomena by open coding
- Grouping of similar concepts into categories according to properties and dimension by axial coding
- Identifying core categories and relating it to others by selective coding
- Grouping core categories into sub-themes
- Identifying overarching themes
- Analysing the meaning participants attribute to the phenomena (emic analysis)
- Analysing what meaning is intrinsic to the data (etic analysis)
- Structuring these analyses according to hierarchy of categories, sub-themes, and themes in a coherent presentation

4.3 Results of the Study

This empirical study had been undertaken from the Anti-Oppressive perspective in Social Work, and the analysis of narratives drawn from the semi-structured interviews was thus mainly concerned with how multiple and inter-related levels of oppression influence the lives of participants (Healy 2005:184).

Within the framework of the personal-cultural-structural (PCS) model of the Anti-Oppressive approach (Thompson, 2016:42), the categories of human need (as set out in Chapter 2), provided guidance not only for how the semi-structured interview questions were framed,

but also to the way in which the salient themes that arose from analysing the interviews had been organised and presented below. This framework provides greater insight into understanding the experience of environmental injustice as a series of nested oppressions, and can be seen represented in the figure below:

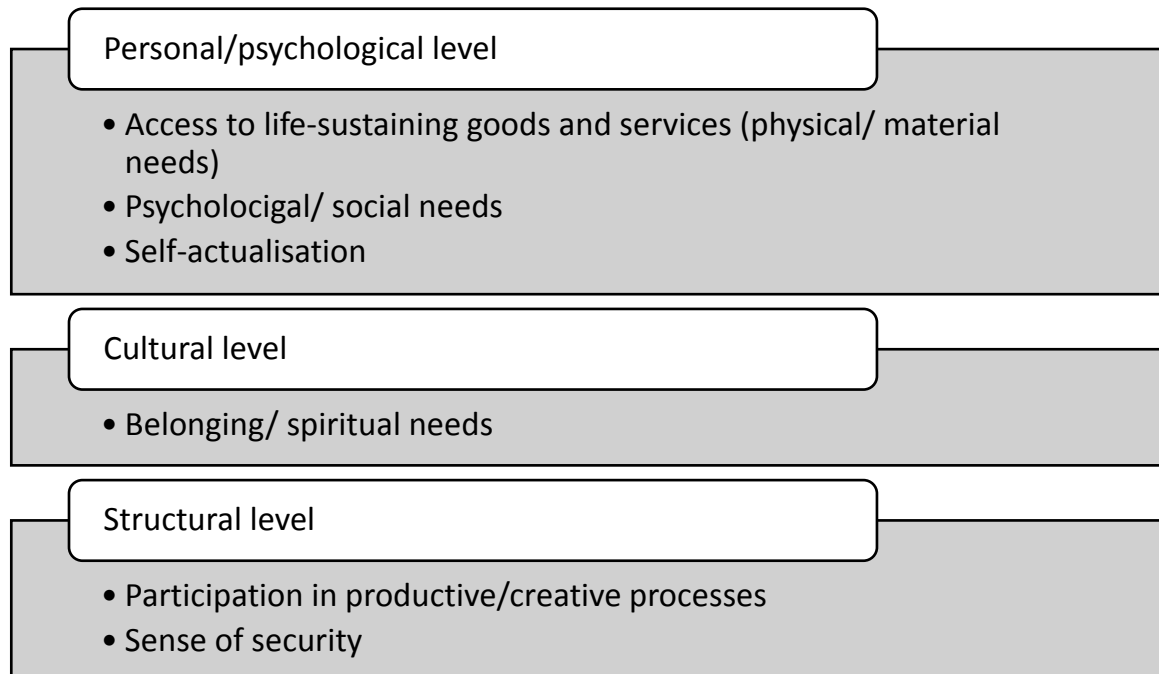


Figure 4.1: The influence of the environment on human needs within the Personal-Cultural-Structural analysis (Source: Gil, 2003, 2008; Gough, 2015)

The following section thus presents the results of the empirical study on the experiences of environmental injustice from the perspective of the residents of an urban informal settlement, in accordance with objective three of the study, set out in Chapter 1. A profile of the participants included in this study will be outlined in order to understand the sample, where after the results will follow the format set out in figure 4.1 above, with the themes correlating to human needs within the PCS model of Anti-Oppressive Social Work.

A disclaimer in the presentation of results: Narratives are drawn from the transcriptions of interviews, in order to substantiate the findings in the sections below. It is worthwhile to note that although all of the participants in the study can understand and speak English, and were comfortable to participate in the interview as such, English is their second, third or fourth language. For this reason, the quotes in this chapter are often colloquial and grammatically incorrect, as it has been kept verbatim for the sake of data fidelity, and to mitigate the risk of subjective interpretation.

4.3.1 Profile of the Participants

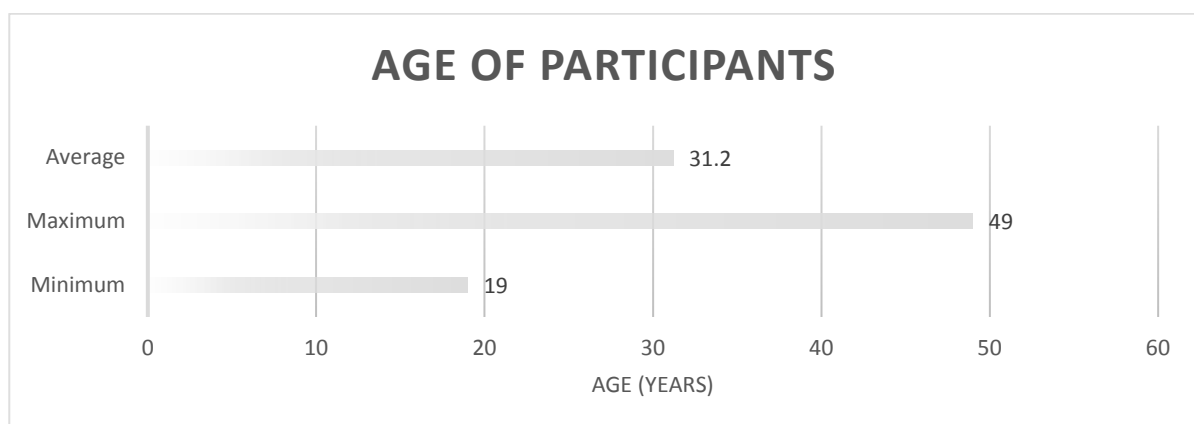
The first section of the semi-structured interview schedule (see Appendix 3) included basic demographic information questions in order to formulate a profile of the participants and understand how this may influence narratives and/or analysis. The following data points of participants were considered:

- Age
- Gender
- Highest level of education, and
- Occupation.

The below figures elucidate the information recorded for each participant on these demographic data points, excepting gender, where there had been no variation, since all participants identified as female (the impact of which is reflected on in section 4 of this chapter). In addition to the stated data points above, the number of years that each participant has lived in the area which was the site of the study had also been recorded and is represented here, as to provide additional insight into narratives throughout the interviews.

4.3.1.1 Ages of Participants

The first demographic data point on which information had been collected, relates to the age of participants. The below figure illustrates the minimum (19 years), maximum (49 years) and average (31.2 years) age of all participants.



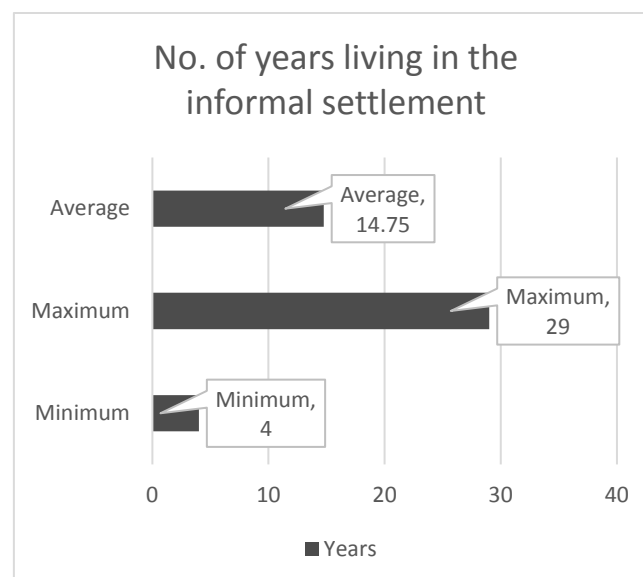
n = 15

Figure 4.2: The ages of participants in the study

The ages of participants represented here largely reflect the larger population of the informal settlement which had been the site of the study, as this community has very little older people (over 65 years), and a high concentration of young people under the age of 35 (Strategic Development Information and GIS Department, 2013:3).

4.3.1.2 Number of Years Living in the Informal Settlement

The number of years participants had been living in the informal settlement has also been included in this representation of the participant profile, as it provides context for the findings to follow. The figure below elucidates the minimum (4 years), maximum (29 years) and average (14.75 years) number of years the participants have lived in the informal settlement which had been the site of the study.



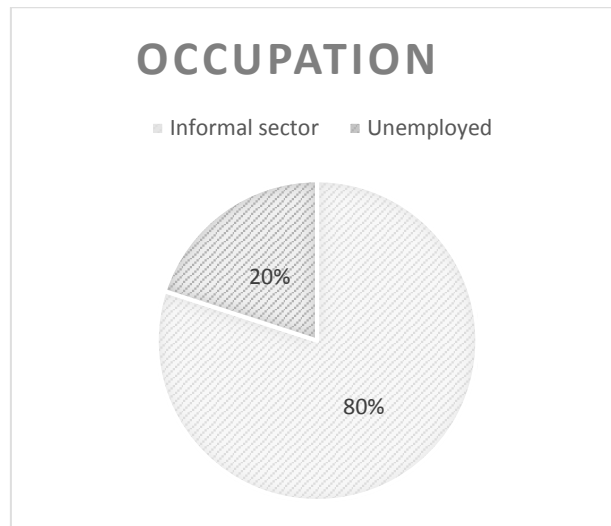
n = 15

Figure 4.3: The number of years that participants have lived in the area which is the site of the study

These findings indicate a broad spectrum of time that participants had been living in the settlement, some moving to the settlement shortly after it had been established in 1983 (Seekings, 2013:1), while others have moved there very recently. The latter group reflects the continued influx of migrants to the settlement, due to globalisation and economic pressure (Seekings, 2013:6).

4.3.1.3 Occupation of Participants

The occupation of participants had also been recorded, and findings show that the majority of participants are employed in the informal sector (12 out of 15), while three of the 15 participants were unemployed. This is illustrated in the figure below:



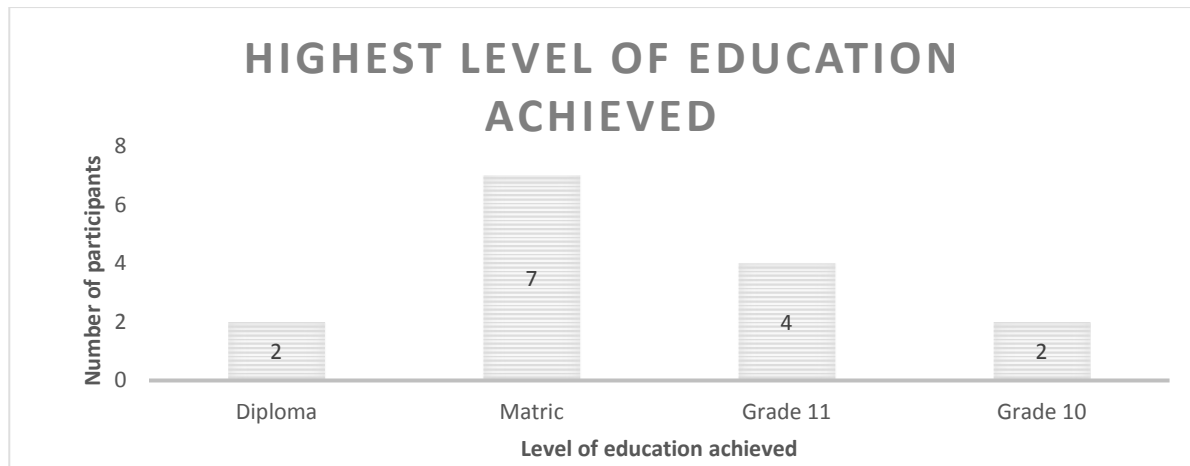
n = 15

Figure 4.4: The occupation of the participants

The unemployment rate depicted in these findings is lower than that of population of the informal settlement, which had been 38% according to the 2011 census (Strategic Development Information and GIS Department, 2013:4).

4.3.1.4 Highest Level of Education Achieved by Participants

Lastly, the highest level of education achieved had been collected for each participant. All of the participants in this study had achieved an education level of Grade 10 or above, as illustrated in the figure below. Of the 15 participants, two (13%) achieved Grade 10, four (27%) completed Grade 11, seven (47%) had completed matric (Grade 12), and two (13%) achieved a Diploma.



n = 15

Figure 4.5: The highest level of education achieved by participants

According to census data for the informal settlement, these findings indicate that the participants generally achieved a higher level of education than the population, of which only 30.7% achieved Grade 12 or higher.

These demographic data points which comprise the profile of participants serve to contextualise the findings of the study, which will be delineated according to the personal, cultural, and structural levels of the Anti-Oppressive approach below.

4.3.2 Salient Themes on the Personal/Psychological Level

There were three themes outlined on the personal/psychological level of analysis, relating to the three segments of human need, namely access to life-sustaining goods and services, psychological and social needs, and self-actualisation (see figure 4.1). Within these themes, a total of six sub-themes were identified from the interviews, as well as 14 underlying categories. This is summarised in the table below:

Table 4.1: Themes, sub-themes, and categories on the personal/psychological level

Themes	Sub-themes	Categories
Residents' experiences of accessing life-sustaining goods and services	Barriers to access	Limited physical resources available
		Daily challenges in accessing water and sanitation
	Inefficient and ill-equipped service delivery	Unreliable water supply
		The onus is on residents to ensure they receive adequate basic service delivery
	Constitutional commitments	The cost of time spent on seeking basic services
		The status designation required to receive RDP housing
Residents' experience of environmental injustice relating to psychological needs and social relations	Intra-community injustices	Tacit sense of injustice in immediate surroundings
		Boundaries of formal and informal give way
	Socially reinforced behaviours	Isolation
		Acceptance of conditions
Residents' experience of environmental injustice and self-actualisation	Sense of self threatened	Regular violations of privacy
		Informality and perceived loss of dignity
	Resilience of residents in urban informal settlements	Seeking social resources to compensate for environmental injustices
		Framing potential sites for environmental injustice in positive ways

The premise for analysis of salient themes in this section is rooted in the philosophical base of the Anti-Oppressive approach, which is person-centred theory (Dominelli, 2002:61). Subsequently, the analyses that follows had been conducted under the assumption that individuals function in a dynamic environment where they will strive to survive and actualise themselves by fulfilling organic and psychological needs (Rowe, 2011:63). How the participants experience the impact of environmental injustice on the fulfilment of these needs thus provides insight into the different levels and forms of oppression experienced.

4.3.2.1 Theme 1: Residents' experiences of environmental injustice in access to life-sustaining goods and services

Human needs pertaining to accessing life-sustaining goods and services includes adequate nutrition, water and sanitation, protective housing, non-hazardous working and living environments, sufficient health care, and safety; both physically and economically (Gough, 2015:1202). The sub-themes that emerged from analysis of the interviews related to how residents of the informal settlement gains access to need-fulfilling resources. These sub-themes are explored below, with correlating categories of meaning that relate to each. The below table (table 4.7) outlines this structure:

Table 4.2: Residents' experiences in accessing life-sustaining goods and services

Theme: Residents' experiences in accessing life-sustaining goods and services	
Sub-themes	Categories
Several barriers to access	• Limited physical resources available
	• Daily challenges in accessing water and sanitation
Inefficient and ill-equipped service delivery	• Unreliable water supply
	• The onus is on residents to ensure they receive adequate basic service delivery
Constitutional commitments	• The cost of time spent on seeking basic services
	• The status designation required to receive RDP housing

a) Sub-theme 1.1: Barriers to access

The first sub-theme identified within the theme of residents' experiences in accessing life-sustaining goods and services, relates to barriers to access. This sub-theme had been identified within in two categories emergent from the participants' narratives, which involved the limits of physical resources available to participants, and daily challenges in accessing water and sanitation. The following section thus explores these two categories which disaggregate the current sub-theme.

i. Category 1.1.1: Limited physical resources available

When it comes to physical environmental resources, these are certainly available within the informal settlement, but the thread of the different participants' narratives indicates that these resources are limited and not readily available. When participants were asked where they buy their food from, all of them referenced large, mainstream supermarket chains of

which, however, only one is in walking distance of any of the participants. If residents seek any type of variety in the foods and products they want to purchase, they must pay for some form of transport, and often travel far.

What also emerged in this regard, is the notion that the resources in the environment coerces residents to constantly consider trade-offs between economy and health, and the former seems to triumph each time. When asked about the possibility of obtaining both healthy and affordable foods from the stores in their neighbourhood, one participant answered as follows:

“Yeah, affordable, yeah they are affordable, but it's not healthy.” (Participant 3)

The language in which the above quote is framed, demonstrates a conceptualisation of the idea of healthy nutrition, and also the awareness that it is not available to them.

This is a phenomenon that has been documented in subject literature, such as in the case of Smit et al. (2016:200), who noted that the layout of informal settlements in Cape Town are not conducive to accessing healthy food options, coercing residents to do shopping less regularly and to rely on foods high in unhealthy preservatives.

Similarly, when it comes to public health clinics, participants stated that these are available in their community, but are limited and difficult to access. When participant 1 was asked to describe their experience of accessing the primary health clinic, she said the following:

“Sometimes you go out, you just stand...you just wait outside. You just wait outside. Sometimes it's raining, sometimes it's cold...” (Participant 1)

Participant eight lamented that several neighbourhoods relied on a single public clinic for health service delivery:

“Sometimes it's not easy, because the clinic is small, and the...the so many areas depend on one clinic...Like, eh, Kuyasa, Nkanini, Ndlovu, Zwezwe...depend on one clinic.” (Participant 8)

Access to adequate sources to buy food and public health services were two of the man-made resources that had been found lacking by the participants, but natural resources also seemed to be a problem. Participants unanimously stated that they have very little access to plants and trees in their living areas. This was regretful to some, as demonstrated by the below narrative:

"If I live in an environment where there's trees and there's plants and whatever, I would naturally...be linked, or love nature... when you're, like, having a bad day, you just sit there, and...absorb the air, take it out...there's just something about, like, nature that just makes someone calm.." (Participant 6)

The above intrinsic notion of Participant 6 is supported by evidence. Visual and physical access to nature, and vegetation in particular, has been shown to have abounding benefits for human health and psychological wellbeing, socio-emotional development, and optimal cognitive functioning (Jackson, 2003:191; Rigolon, 2016:161). The participants, however, often expressed that the lack of public resources and safe access to it, has turned the natural environment into a source of fear, rather than comfort. This is expressed in the strongly worded narrative below:

"In that dam. Yes, there is a dam there. The...the kids, are going there and die. But because we don't have the open space, for where to put the park where it is going to be safe, they are going there, then every two to three months, the child die there!" (Participant 15)

ii. Category 1.1.2: Daily challenges in accessing water and sanitation

Many of the participants rely on outdoor taps and toilets, or the use of the taps and toilets inside the homes of a landlord or family member. A common living arrangement in the more formalised areas of the settlement involves the owner of a brick house renting out space on his/her property to residents who construct their own informal house or "shack". These shack-dwellers then rely upon the brick homes, and consequently their owners, for access to water and sanitation:

"We've got water taps. Inside...inside the house. Uh, I'm renting at the back." (Participant 3)

Besides the challenge of having to go outside their own home to get any water or use the toilet, and in addition to having to rely on others to use the resources in their homes, residents also have to share these limited resources with many others. When asked how many people share the same single tap and toilet with her, participant 2 answered as follows:

"Eight people. Yes. It's me, and my kids and my uncle and yeah, his wife."

Notwithstanding the psychological difficulties of having to rely on others for basic amenities, inadequate or restricted access to safe, clean water and sanitation services can lead to multiple adverse health effects, especially in the case of infants and children (Bartlett,

1999:65). Participants who only have access to chemical toilets (3/15), are in an even more precarious situation when it comes to adequate and hygienic sanitation, as demonstrated in the narrative below, where the participants describe their dependency on state service delivery in sanitation:

“They clean them once a week...But by that time they clean it...by the time they clean it, it's already full...And yes we are struggling there. And if, that one is full, there by us, we have to go and look for the other one, and the other people lock the...the toilets.” (Participant 10)

b) Sub-theme 1.2: Insufficient and ill-equipped service delivery

The second sub-theme that had been identified within the theme residents' experiences of accessing life-sustaining goods and services, is that of insufficient and ill-equipped service delivery. The findings related to this sub-theme are pertinent, since service can have a significant and immediate influences on the lives of residents in informal settlements or low-income communities (Ndlela, 2011:11).

The two categories which explore this sub-theme, as set out in table 4.6, are discussed in detail below.

i. Category 1.2.1: Unreliable water supply

A prominent lack that had been identified by participants, had been that of wide-spread unreliability in water supply. Residents say that their municipal water sources are often dysfunctional, leaving them without water for long periods at a time:

“Sometimes...sometimes...when we go to the tap there's no water. Maybe...three hours...maybe three hours there is no water in the tap. So that time we must go to check the bucket is full of water.” (Participant 1)

“Sometimes we don't have water for two days, three days.” (Participant 2)

“Last time we didn't have water for five weeks.” (Participant 7)

One participant indicated that it is common knowledge that the use of water is policed in their community:

“They tell us that if you're using the certain amount of litres, then they going to switch off the water.” (Participant 3).

This is reiterated by authors, stating that access to safe, clean water is something that is lacking greatly in low socioeconomic settlements, especially in comparison to more affluent areas (Cock, 2007:94). This is true in South Africa, as well as elsewhere in the world (Mels et al., 2009:331; Storey, 2012:116; Brunn & Wilson, 2013:286)

For those residents who live in the entirely informal sections, accessing water becomes even more challenging. Not only do residents have to share the water access points with many others, but they might have to walk some distance to get to it, as demonstrated in the narrative below:

“...I have to take a bucket and go far for fresh water...Fifteen minutes...And then when I get there, there's already a queue of people standing there waiting.” (Participant 10)

Another participant noted an even more concerning phenomenon related to water provision in her neighbourhood. This relates to the quality of the water received from the municipality for household purposes. In the extract below, the participant notes her concern that the water from taps is causing a skin rash for herself, members of her family, and neighbours:

“ If the baby is...is doing this (makes scratching motion), and I've got that pain... Even my child, at night, when I want to sleep at night... Then I'm thinking it's the water, because the people, almost all have.” (Participant 11)

This is commensurate with the literature, where water supply in low socioeconomic communities are often contaminated due to environmental hazards (such as sewage plants and landfills) specifically surrounding these informal localities (Heaney, Wing, Wilson, Campbell & O'Shea, 2013:24).

ii. Category 1.2.2: The onus is on residents to ensure they receive adequate basic service delivery

Keeping in mind the above category and the focus on water supply, the analysis of unreliable water supply also produced another noteworthy category relating to the service delivery to residents of the urban informal settlement. From the interviews with participants, it became clear that they have to be constantly proactive in seeking basic, adequate service delivery. Although Section 27.1(b) of the Constitution of the Republic of South Africa (1996) guarantees sufficient water to all citizens, residents of the informal settlement often experience a

disproportionate delay in service delivery associate with environmental resources such as water:

“Sometimes they don't come immediately...they come...they take time, maybe two days”.
(Participant 2)

Furthermore, in some cases, the participants indicated that if they did not go in person to report basic services not working, they would receive no service delivery at all, even if they reported by other means:

“Sometimes you call them, if they didn't come, then you have to go to the...to the office.”
(Participant 2)

A more concerning comment came from Participant 15, who had noted that service delivery issues are not restricted to water and sanitation, but to more urgent services in cases of emergency:

“Police can't come at night, because even then, they have to be safe. We used to have the ambulance inside at night, even if a person is stabbed or maybe a person is injured...maybe a person is sick. But now the ambulance don't come anymore, because of the level of the crime.” (Participant 15)

This finding reflects what has resulted from the environmental injustice of establishing the urban informal settlement in this particular location. The character and geography of the land is not conducive to access and adequate service delivery (Mels et al., 2009:330). The impact of this could be dire, however, Cock (2007:94-95) notes that the break-down in basic service delivery, especially pertaining to water and sanitation, leads to poor health outcomes, domestic violence and conflicts in the community as a whole.

c) Sub-theme 1.3: Constitutional commitments

The Reconstruction and Development Programme (RDP), an election manifesto developed as a roadmap for the new democratic government, unequivocally states that all citizen are entitled to peaceful and dignified housing, and that it is the ultimate responsibility of government to ensure this (African National Congress, 1994).

This sub-theme identifies the recurring notion that residents of the urban informal settlement have found that constitutional rights and commitments by the government are often not

straight-forward, and neither is accessing basic services guaranteed to all South African citizens. According to sections 26 and 27 of the Bill of Human Rights, all citizens of the country are entitled to adequate nutrition, water, sanitation and housing (Republic of South Africa, 1996). What became apparent from the participants' narratives, however, is that this is not easily executed. The categories and corresponding narrative extracts below explore this in detail.

i. Category 1.3.1: The cost of time spent on seeking basic services

Although basics services are available to the citizens of the informal settlement, it seems that there are intangible and secondary costs to them in accessing these services. The primary category that became evident here, is that of the amount of time that participants indicated they have to spend on average waiting to receive, for instance, health care service delivery at primary health (free) clinics. Several participants indicated that on average, they could wait seven and a half (7.5) hours to be helped in the clinics on a single visit:

"...if you go to public clinics you have to wake up early,...And you wake up early, but they start...eh...working late, then sometimes they take...their time, you maybe...you were there at the clinic at half past seven, you leave there at four o'clock." (Participant 2)

This state of affairs has the implication that residents may have to dedicate an entire working day to seeking basic health care services, time which some would have to take away from paid work, or child care and supervision. The ill-effects of this level of service delivery has not gone unnoticed, as the literature reveals this particular informal settlement is the sub-district of Cape Town with the worst health indicators and outcomes for residents (Smit, et al., 2016:198).

ii. Category 1.3.2: The status designation required to receive RDP housing

The Reconstruction and Development Plan that had ushered South Africa into the age of democracy with lofty promises for all citizens, particularly those disadvantaged by the injustices of the Apartheid regime, had set out a strategy to ensure formal housing for all those in need (African National Congress, 1994). This had been intended to fulfil and progressively realise Section 26(1) of the Constitution of the Republic of South Africa (1996), unequivocally stating that all citizens have the right to adequate housing, and (in Section 26(2)) that it is the responsibility of the state to ensure the legislature and resources are available to achieve this right. People thus living in low socioeconomic or informal settlements

qualify to receive housing from the government, colloquially referred to as “RDP houses”. The participants of this study shed some light on the impact of this intended instrument for justice in their neighbourhood.

According to the participants who commented on RDP housing, there seems to be additional barriers to obtaining such a provision from the government. Firstly, it seems that you only qualify to apply for RDP housing if you already own a plot of land on which the house can be constructed:

“But, it's for free,...but for those who...already have a...a plot. It's not easy for the backyards.”
(Participant 2)

This adds a layer of complexity on the fulfilment of the right to housing, as in practice it seems that citizens need to meet higher pre-requisites than what is defined in legal provisions, such as demonstrated in the statement below:

“So, I don't qualify for the RD...RDP house, I don't qualify for the bond either...So I'm stuck in that shack...It...it's my husband wages...They said if...if you get paid a month or more than 3.5 (thousand), you don't qualify for the RDP...But if you go to the bank now, we both don't qualify for the bond.” (Participant 15)

The participants’ lived experiences regarding accessing life-sustaining goods and services as deconstructed above, is supported by literature on the subject, indicating that environmental injustice is a daily reality for the residents of low socioeconomic settlements, and that these injustices have a significant impact on residents’ lives (Parsons et al., 2015; Heaney et al., 2013; Schoolman & Ma, 2012; Scott & Oelofse, 2005; Bullock, 2001:56; Beall, Crankshaw & Parnell, 2000; Fritz, 1999).

4.3.2.2 Theme 2: Residents’ experience of environmental injustice relating to psychological needs and social relations

According to Smit, et al. (2016:201), urban informal settlement host unstable environments that can contribute greatly to psychological distress and poor mental health in residents. This can lead to a multitude of oppressions on the personal/psychological level, and this ill-effect seems to be the reality of many residents, as demonstrated in the findings related to this distress.

Table 4.3 (below) delineates the sub-themes that were identified within the theme of environmental injustice relating to psychological needs and social relations, as well as its corresponding categories.

Table 4.3: Residents' experiences of environmental injustice relating to psychological needs and social relations

Theme: Residents' experiences of environmental injustice relating to psychological needs and social relations	
Sub-themes	Categories
Intra-community injustices	<ul style="list-style-type: none"> • Tacit sense of injustice in immediate surroundings • Boundaries of formal and informal give way
Socially reinforced behaviours	<ul style="list-style-type: none"> • Isolation • Acceptance of conditions

a) Sub-theme 2.1: Intra-community injustices

Analysis of the transcripts revealed that the participants displayed an awareness for the larger injustices leveraged against their community as a whole, something which is exemplified in this narrative:

"...a lot of times when I go out for instance like, go out...recently I was at Stellenbosch on a completely...different environment...uhm, living there has just taught me that...the, you know that, there's so much outside." (Participant 6)

However, the sub-theme of intra-community injustices emerged, where disproportionate distribution of environmental benefits and harms could be seen in much closer quarters. The following section thus identifies and explores categories related to environmental injustice experienced by residents within their very own communities.

i. Category 2.1.1: Tacit sense of injustice in immediate surroundings

A category of meaning that arose with regards to intra-community injustices, had been that of an implicit, yet undefined sense of injustice within their neighbourhood and surroundings. This may not have been articulated by the participants, but became apparent in reference to environmental discrepancies between residents and their neighbours. This is demonstrated in the statement below, where the participant refers to their water provision being cut off, while their neighbours are unaffected:

“Sometimes we don't have water for two days, three days. Then we have to ask some, maybe neighbours.” (Participant 2)

Other times, the sense on inequality based on immediate environment was more explicit, as in the experience of a resident who lives in an informal “shack”, while her neighbours live in brick houses:

“It's not safe, our community... if you don't have a brick house.” (Participant 1)

This finding is corroborated by other studies, such as that of Shortt and Hammett (2013), who investigated the conditions of an informal settlement in Hout Bay, Cape Town. In this study, it had been found that there is a disconnect between residents of the neighbourhood, based on divisions created by those who were fortunate enough to receive government housing, and those who were not (Shortt & Hammett, 2013:622).

ii. Category 2.1.2: Boundaries of formal and informal give way

Although there seems to be a division between more formalised (brick houses) and entirely informal (“shack”) living areas, some participants indicated that these boundaries become unclear. This is already apparent in the common model of shack-dwellers renting space on the property of residents who own brick and mortar homes, such as delineated in 3.2.1.1 (c). This creates a distinct and powerful image of inequality in people’s own backyards, so to speak:

“It's a pain every day. Because everybody may...let me talk about my street. Everybody is sleeping in the...in the brick house. I'm the only one who is staying in the shack, because I don't afford even to be...I don't have money to be the house, I don't qualify to have the RDP house, so I'm stuck there in one place. So, it's not nice to...to every...everything that is bad is coming to your own house...because you don't have...because it's not safe. Even the kids are complaining every day, why are we staying in the shack, everyone is staying in the brick house? But we have no choice, we have to stay there.” (Participant 15)

This phenomenon has been identified by other authors, such as Shortt and Hammett (2013:623-624), who found great disparities within the Imizamo Yethu informal settlement in Hout Bay, South Africa. Not only did the findings of the above study identify the prevalence of such disparities, but it also demonstrated the detrimental impact these conditions have on

the self-esteem of residents and overall community cohesion (Shortt & Hammett, 2013:622-624).

a) Sub-theme 2.2: Socially reinforced behaviours

The sub-theme of socially reinforced behaviours came about with recurring references to forms of oppression that have been internalised, and are perpetuated by residents by means of their own behaviour. According to Clifford and Burke (2009:32), disproportionate abuse of power often leaves oppressed groups in a state of hopelessness, coercing them to internalise such injustices, and ultimately perpetuating it in their own lives. This can be noted to some extent in the categories of isolation and acceptance of environmental conditions, detailed below:

i. Category 2.2.1: Isolation

Many participants talked about isolation, brought about by the conditions of the residents' environment. Due to the lack of resources for activities and recreation in the neighbourhood, participants often prefer, or have little choice, but to stay at home for the majority of their time. This, however, leads to a sense of isolation from their community, as is reported below:

"Eh...sometimes some others, they think that...eh...I'm a person who have the money, the way they look at me. Or, I'm a person who didn't want to socialise with others. Or sometimes they...I'm a person who didn't even say hi to others, the way I am, because I'm just "hello" and go straight to my shack." (Participant 7)

Moses (2006:113-114) noted that social isolation is often a result of environmental injustices in and amongst communities, where such inequalities perpetuated previously legitimated discriminatory structures.

ii. Category 2.2.2: Acceptance of environmental conditions

A prevalent experience expressed by most participants, is that of a certain acceptance of the environmental conditions in the informal settlement. This is overtly identified by some in relation to the area where they are staying:

"But then I'm staying because I have no choice." (Participant 3).

"...most of time, I live there. So it's fine to me. Because my mother can't afford to buy a proper house...so I accept the situation." (Participant 5).

However, this finding also becomes apparent in the way participants refer to phenomena and in how they have answered the interview questions. In many cases, the participants, when prompted to speak about the environments around them, refer to sources and scenes of inequality as if it is an inevitable part of their day:

“...so I'm not get affected sometimes. Because I'm used to...I grow up here, I start here, I also do my things here. So I'm used to this life.” (Participant 12)

Shortt and Hammett (2013:622) note that loss of hope for the future is often times the result of living in areas where there is a disproportionate burden of environmental injustice, which certainly supports the findings of this study.

4.3.2.3 Theme 3: Residents' experience of environmental injustice and self-actualisation

Investigating the experience of environmental injustice as it relates to the concept of self-actualisation is a pertinent exercise, as the processes of self-actualisation will affect the physiological and psychological wellbeing of an individual throughout their life (Benninger & Savahl, 2016:1).

The table below (table 4.4) presents the sub-themes of how residents experience environmental injustice in relation to self-actualisation, as well as its corresponding categories:

Table 4.4: Residents' experiences of environmental injustice and self-actualisation

Theme: Residents' experiences of environmental injustice and self-actualisation	
Sub-themes	Categories
Sense of self threatened	• Regular violations of privacy
	• Informality and perceived loss of dignity
Resilience of residents in urban informal settlements	• Seeking social resources to compensate for environmental injustices
	• Framing potential sites for environmental injustice in positive ways

a) Sub-theme 3.1: Sense of self threatened

The findings identified below relates to residents' experience of environmental injustice, and how it threatens their sense of self. These findings are salient, as an impaired sense of self will affect an individual throughout their life (Benninger & Savahl, 2016:1).

i. Category 3.1.1: Regular violations of privacy

The environment in the informal settlement, to which the participants are exposed to daily, yield regular violations of their privacy, which may have a detrimental impact on their sense of self. Participant 2 stated the following:

“Because sometimes, even if you are still sleeping, you can hear them breaking your window...”

This experience of casual home invasion, or the threat thereof, highlights the constant possibility of privacy violation, and the inability of residents to control and curate private spaces for themselves.

“It's putting me down. Sometimes I try to build, why I'm...I'm going to start here, like I don't belong here in South Africa. I'm voting every time there is elections. But I...feel like I don't belong here, you see?” (Participant 15)

According to Huchermeyer (2004:340), intrusions of privacy are more prevalent the denser the population of the informal settlement, due to less respect of personal space by community members who are not committed to honouring the use of collective space. The author further emphasises that such infringements on the right to privacy of residents are enabled by the lack of formal legal status, and consequently lack of adequate protection, afforded to residents of low socioeconomic settlements in South Africa (Huchermeyer, 2004:340).

ii. Category 3.1.2: Informality and a perceived loss of dignity

An interesting underlying notion that became apparent from analysis of the findings, is that of a loss of dignity associated with informal housing and living spaces. Participants indicated that the environmental conditions in their current neighbourhood are in some way inferior to their birthplace, and associated with it, comes a degradation of their personal dignity. One participant captured this idea with the following comparison:

“...the first time I came to Cape Town, I was like, too much shack(s)! Then in Eastern Cape, shacks we...we know as a...as a house to...to stay a (for) chickens (sic). Now I was like, what?! What is going on here?” (Participant 2)

Other participants reported:

“Because, sometimes, now...we don't have space...Sometimes...here's a dirty water (sewage), and don't have...I don't have a hole, there's no space...And I don't want to dig a hole while the children are playing...Then I throw there...on the small road that we have....Then the people will talk and talk..."why you people throwing water in the road?!" So, but I just keep my head...I don't answer.” (Participant 10)

“Cause honestly, living in a township like this, at times it's like good...to...good points, because you get to mingle with like people on a social level, but then, when you think about it on another level now, it...we almost live in a world where, you know, possibilities are restricted for us, because people feel like ok, when you from the township you have to drink alcohol, there's no life...” (Participant 6)

Indeed, authors on the subject has echoed these remarks of participants, stating that the unjust conditions of informality in low socioeconomic settlements are negatively correlated to a sense of dignity (Ndlela, 2011:11).

a) Sub-theme 3.2: Resilience of residents of urban informal settlements

As opposed to the detrimental effects experienced by participants with regards to the influence of the environment, there had also been some evidence to demonstrate positive and encouraging effects experienced by residents. From this sub-theme the resilience of residents of urban informal settlements emerged, and this is elucidated through the categories of social resources compensating for environmental injustices, and the way in which residents frame potential sites for injustice in positive ways.

i. Category 3.2.1: Seeking social resources to compensate for environmental injustices

The experiences reported by the participants had also delivered some insight to more positive social phenomena and situations arising in the same milieu. Participants often cited relying on fellow community members in cases where unjust environments created difficulties in their daily lives:

“...we just sort it out, because my landlord is not that kind of woman who likes to talk too much, she is a quiet person. So, we just try to find a way among ourselves that ok, in order for us to have enough water...all of us, we must only use this much. Yes, someone is...want to

do the laundry...then we say ok, today I'm the one who is going to do the laundry. They must wait and know that I'm going to use more water.” (Participant 3)

What can be seen here, is a sense of community and inter-dependence that might not have occurred otherwise. The unjust and challenging environmental conditions provide an opportunity for residents to either feel resentment or support one another, and the latter is clear what occurs in the case of the participants.

This is a significant finding, as the formation of a strong sense of community can be a potent psychologically protective factor to the residents of an informal settlement (Shortt & Hammett, 2013:623).

ii. Category 3.2.2: Framing potential sites for environmental injustice in positive ways

Emerging from the experiences of participants were many situations and environmental conditions that may easily be constructed as challenging and unjust, are framed by them in positive ways. For example, where there are no resources available in participants' neighbourhood and they have to travel far distance, they frame this as an opportunity for them to get good exercise:

“I walk there, because sometimes I jog, so to get some exercise.” (Participant 3)

One of the participants shared a touching sentiment on how living in an informal settlement may enhance emotional intelligence, motivation and compassion:

“So I'm proud of the person I will become, because of the place where I come from, because it teaches you to be strong, it teaches you to have courage, it teaches you to be ambitious, it teaches you to...to love yourself, to appreciate yourself. It teaches you... to know people, to understand people, to...love people as well. It teaches you just a whole lot of things, and a whole lot of positive things as well. To know that, in life you have to work hard, like, life does not come easy...” (Participant 6)

This latter narrative is particularly demonstrative of residents' resilience, as the conditions brought about by environmental injustice could so easily lead to a loss of hope and dignity (Moses, 2006:113-114).

Both the seeking of social resources and positive framing seems to be effective mechanisms participants utilise to compensate to some extent for the environmental injustices they face, and they often make use of these in their daily lives, as demonstrated by the findings in this section.

4.3.3 Salient Themes on the Cultural Level

The cultural level of Anti-Opressive analysis involves the investigation of the norms and meanings that have become shared within a given community (Thompson, 2016:35-36). During this investigation, the theme of residents' experience of environmental justice relating to belonging and spiritual needs had been the most prominent on the cultural level, and is set out below:

3.3.1 Theme 4: Residents' experience of environmental injustice with regards to belonging and spiritual needs

An investigation of belonging and spiritual needs is important to consider on the cultural level, as it will have a great influence, either detrimental or enhancing, on the risk related to poor health and mental outcomes for residents (Jackson, 2003:193).

Table 4.5: Residents' experiences of environmental injustice with regards to belonging and spiritual needs

Theme: Residents' experiences of environmental injustice with regards to belonging and spiritual needs	
Sub-themes	Categories
Longing to be somewhere else	<ul style="list-style-type: none"> What residents identify as "home", is somewhere else than where they live
	<ul style="list-style-type: none"> Residents feel much more at ease where they come from than where they live
A sense of spiritual oppression	<ul style="list-style-type: none"> Oppressive environmental conditions attributed to supernatural causes
	<ul style="list-style-type: none"> Residents do not feel free to fulfil spiritual/religious practices in their environment

a) Sub-theme 4.1: Longing to be elsewhere

In the findings set out in this sub-section, a longing to be elsewhere than the site of the study - where all the participants live – became apparent. This is identified in both what participants

conceive of as their home, and in the level of comfort they feel in the places where they are staying.

i. Category 4.1.1: What residents identify as “home”, is somewhere else than where they live

All of the residents who participated in this study have been living in the particular informal settlement, which was the site of the study, for several years. This ranges from four (4) to twenty-nine (29) years, with an average of fifteen (15) years amongst them all. However, very few of the participants would refer to this community as their home. The general notion amongst the residents interviewed was that their so-called “home” was still in the Eastern Cape, where the majority originated from, or in the case of Participant 2, who had been living in the urban informal settlement in excess of twenty (20) years, yet reported the following when asked about the Eastern Cape:

“It's our home...I think I'll...I want to move back there, but only if I can have a job.” (Participant 2)

This finding corresponds with Seekings (2013:12), who has found that the particular urban informal settlement in question remains a community of people largely from the Eastern Cape, and who spend much of their time travelling back and forth between the two places – longing for their homeland, but bound economically to their new place of stay.

ii. Category 4.1.2: Residents feel much more at ease where they come from than where they live

There is a clear subjective belief among the majority of participants that their home of origin - the environment in which they were born and raised - is far superior to their current circumstances. In fact, many participants hold strong idealistic views of what life had been like in the Eastern Cape, for example, as opposed to the urban informal settlement in which they find themselves now. Participant 2, for example, states the following:

“Uh, it's a big house in Eastern Cape. We live in a big house, big yard, we have...uh...a space to...to...to play, everything. We...we free to do everything.”

b) Sub-theme 4.2: A sense of spiritual oppression

The findings delineated below encompass repeated references by participants to some sort of spiritual oppression associated with their experiences of environmental injustice. This

correlates with authors who have noted that migration to informal settlements often lead to spiritual alienation, and this has been cited in particular for residents of the Eastern Cape moving to low socioeconomic settlements in Cape Town (Dold & Cocks, 2012:18; Cock, 2007:33).

i. Category 4.2.1: Oppressive environmental conditions attributed to supernatural causes

When considering the often adverse circumstances they experience in the informal settlement where they live, some of the participants turned to preternatural explanations as a way of processing and coping with the hardships they face.

Supernatural causes were also sought in the context of the high rate of crime and unsafe nature of the environment in the informal settlement. One participant, when referring to the difference between her current environment in an informal settlement and the place where she had grown up, proposed that the unsafe and crime-ridden state of the informal settlement can be attributed to witchcraft:

“I think they were using muti (potions used in indigenous African witchcraft) and all that, because when they rob someone, they rob in a strategic way, because you give your money to them.” (Participant 3).

“We believe that. So ooh, no you are not going to get a job, when you see other people's waste, yeah. We believe that.” (Participant 10)

These types of beliefs – attributing unjust environmental conditions to divine or supernatural causes – are not uncommon. Several authors have found inhabitants of low socioeconomic settlements to believe that serious illness and socioeconomic misfortune to be due to the will of deities or supernatural intermediaries, such as witchdoctors (Gray & Wegner, 2010; Van Dyk, 2001; Papreen, Sharma, Sabin, Begum, Ahsan & Baqui, 2000).

ii. Category 4.2.2: Residents do not feel free to fulfil spiritual/religious practices in their environment

For residents, living in the informal settlement often signals a disconnect with spiritual, religious or cultural practices that are important to them. Some of the participants noted that their environment, for some reason or another, is not conducive to engaging in the rituals

that are essential parts of their spiritual identity. One participant states that they need to return to their place of birth to bury people who had passed away:

“We don't bury our people here, unless you have needs, so only bury them in the Eastern Cape, where they...the traditions and the cultural things have to be made, because they are ancestral places.” (Participant 4)

Another participant said the following on the subject of cultural practices:

“...sometimes I look in the suburbs...if you are doing this in your house, people don't worry what is your culture and what is not your culture. They just move on with their own culture. They don't judge you because of your culture. Like you...you...eh in our own culture, they believe that we belong to the tradition, to the sangomas (African witchdoctors), to the...to the ancestors. If you...you become a Christian, it's a challenge in our community.” (Participant 15)

These findings are affirmed by existing research, such as by Dold and Cocks (2012:18) who has found that people migrating from the Eastern Cape to informal settlements in the Cape Town are alienated from their cultural identity and practices, due to limited access to nature, which had traditionally been the site of such practices.

On the cultural level of Anti-Oppressive analysis, the findings of this study relate to residents' experiences of environmental injustice with regards to belonging and spiritual needs. On a more granular level, this can be seen in the participants' recurring expression of a longing to be elsewhere, as well as a sense of spiritual oppression.

4.3.4 Salient Themes on the Structural Level

The structural level of Anti-Oppressive analysis involves the consideration of how power dimensions relating to class, gender and race relations shape societal injustices, and how this affects individual on all levels (Thompson, 2016:38). This is pertinent when investigating environmental injustice in South Africa, as the struggle for land and resources had been at the heart of many injustices perpetrated under the apartheid government (Carruthers, 2006:811).

The themes, sub-themes and categories identified from the interview data explores this notion of structural oppression in a bi-directional relationship with environmental injustice,

where the experiences of residents illustrate both unjust environmental conditions creating skewed power hierarchies in society, and the unjust relations of society causing disproportionate distribution of environmental benefits and hazards. The way this has been noted from the findings is summarized in the table below:

4.3.4.1 Theme 5: Residents' experiences of environmental injustice relating to creative and productive processes

Table 4.6 captures what had been noted from participants regarding their experiences of environmental injustice, as it relates to creative and productive processes:

Table 4.6: Residents' experiences of environmental injustice relating to creative and productive processes

Theme: Residents' experiences of environmental injustice relating to creative and productive processes	
Sub-themes	Categories
Perceived opportunity	<ul style="list-style-type: none"> • Migration in the hopes of gaining employment • Migration on the basis of social capital
Restriction of movement	<ul style="list-style-type: none"> • Available transport solutions are impractical • Movement is limited to private spaces

a) Sub-theme 5.1: Perceived opportunity

When it comes to participants' experiences of environmental injustice as it pertains to creative and productive processes, findings indicated a pattern of meaning with regards to perceived opportunity. This had been noted by participants in terms of migration to the informal settlement, and can be further divided into migration with regards to employment, and migration on the basis of social capital. These findings are elaborated on below:

i. Category 5.1.1: Migration in the hopes of gaining employment

By far the greatest reason for participants to have moved to the informal settlement they currently live in, was because either themselves, or their parents, had sought employment opportunities close to the major city:

"They moved for work, and also their family was here." (Participant 14)

"I didn't have the money, I got the poor back at home. I came here to look for a job." (Participant 15)

Du Toit and Neves (2007:16) confirm that employment is the largest cause of migration from the Eastern Cape to urban informal settlements, but that this does not occur without a host of problems for the migrants. Not only are these urban informal settlements some distances away from economic centres, creating additional barriers to residents gaining employment, but there are also very little employment opportunities available in the settlement itself (Du Toit & Neves, 2007:16).

ii. Category 5.1.2: Migration on the basis of social capital

Another, less prominent, yet still important category that came out of analysis of the findings, had been that of participants migrating to the informal settlement because of a sense of social capital. Many participants reported that either they or their parents had moved to the informal settlement in question because they had family members who already lived there, and on whom they could rely (temporarily or not) for accommodation and support while they find their own feet. This is illustrated in the narratives below:

“...my mom was a...looking for a job, because in Eastern Cape there's no job. So she...we come here because she was looking for a job. We were staying with my aunt, then she find a job and then she find a place for us to stay.” (Participant 2)

“...in Eastern Cape I lived with my grandmother. My grandmother, by that time she passed away. Then I come to my auntie...in Cape Town.” (Participant 1)

“...my father was working here...so my mother was moving to stay with my father..” (Participant 8)

These findings are consistent with what literature exists, as it has been found that without these types of social networks, resident of urban informal settlements would not be able to survive the pressures of unemployment and poverty prevalent in low socioeconomic settlements (Kuo et al., 1998:846).

b) Sub-theme 5.2: Restriction of movement

Another pattern of meaning that had been found prevalent with regards to experienced environmental injustice as it pertains to productive and creative processes, was that of the restriction of participants' movement. This can be seen both in the impracticality of available transport solutions, as well as in the restriction of movement to private spaces. These findings are discussed below:

i. Category 5.2.1: Available transport solutions are impractical

All of the participants in the study did not have means of independent transport, and when they are required to travel greater distances than they could walk, they are dependent on public transport. What became apparent during interviews with the participants is that there are public transport options available, but that these options are often unfeasible, either in terms of affordability or in the sense that it necessitates residents to travel under impractical or unsafe conditions. This is illustrated in the narratives below:

“...seriously...I don't think I like where I stay because we are far from our shop...shopping centre...and there's no transport, so we have to walk, then we carrying a...a plastic (bag), so I think it's not easy just to...just in that area, maybe.” (Participant 2)

“So you use the private transport if you want to arrive before time.” (Participant 5)

“Mm, it's not safe to take the taxi, because it's not the one driver obvious who is driving the taxi...So they are doing the reckless driving.” (Participant 7)

Similar findings have been documented by Du Toit and Neves (2007:17)., who note that commuting can come at a great financial and physical cost to residents of informal settlements, due to a lack of road infrastructure, unreliable public transport options, and great distances to economic centres

ii. Category 5.2.2: Movement Is limited to private spaces

Another category that emerged under the sub-theme of restricted movement, is that of residents' movements being restricted to private spaces, such as their own homes, due to the environment. This is brought about by a number of factors. One of these factors relates to isolation within the community, brought about by migrating to the informal settlement in question. This is demonstrated by the narrative below:

“...but most of the time I always indoors alone, and on weekends, maybe if she (participant's cousin) is not at work, she can come over or I go to her house. That's it. I don't go out...I don't friends like in Jo'burg (Johannesburg), like a community where I can say, no I've got these friends as a group go out socialising.”(Participant 3)

Smit et al. (2016:201) corroborates this finding, citing that such restriction of movement to private spaces often occur due to unsafe public and shared natural spaces in low socioeconomic communities.

This sub-section elaborates on how participants experience environmental injustice in relation to its impact on creative and productive processes. The findings show that these experiences of participants are embodied both in the implications of perceived opportunity, and in the restriction of participants' movement.

4.3.4.2 Theme 6: Residents' experiences of environmental injustice in relation to a sense of security

The below table elucidates the sub-themes and categories identified from the interview data.

Table 4.7: Residents' experiences of environmental injustice in relation to a sense of security

Theme: Residents' experiences of environmental injustice in relation to a sense of security	
Sub-themes	Categories
Residents rendered vulnerable by the environment	<ul style="list-style-type: none"> • Environment breeds opportunistic crime • Vicarious experiences of real threats of disaster
Fear of crime	<ul style="list-style-type: none"> • First-hand experience • Constant and persistent fear

a) Sub-theme 6.1: Residents rendered vulnerable by environment

The experiences of participants relating to them being made vulnerable by their environment can be divided into the environment breeding opportunistic crime, and vicarious threats of disaster. These notions are discussed in detail below:

i. Category 6.1.1: Environment breeds opportunistic crime

A noteworthy category that emerged relates to how the environment that residents find themselves in, creates the opportunity for crime, and so perpetuates crime in the communities. This can be seen in the narrative below, where a participant refers to how the housing she is afforded, leaves her vulnerable:

"Well, firstly it was my first time to live in a shack when I came here. It was a bit uncomfortable, I felt unsafe, because a zinc (referring to what her shack is made of)...like someone can pull the zinc and open that zinc and come inside. And then I made it a burglar (burglar bar/security gate). And then they did come in, once. I had a burglar on the door...They were coming to rob me. Then they opened the burglar, they managed to open the burglar.

Imagine! Because it was only a zinc, and then the burglar is attached to the zinc...so it was easy for them to open the burglar. So I felt like it's...it's not safe." (Participant 3)

This sentiment is corroborated by another participant:

"They take out the window, they get inside and take whatever they want...Then when you wake up, there's no window, the door's open, there's no furniture." (Participant 10)

The phenomenon can also be seen in which natural, open spaces and commons are available to residents:

"But we do have the open spaces, over there. Wh...when you go around Baninzi Street...there is an open space there. And that open space, it's a...it's a dumping area. People they dump, and also the robbery take place there." (Participant 12)

Parsons et al. (2015:295) noted that the above is often the case in urban informal settlements, where the public resources and common spaces that do exist, become "hotspots" for crime and delinquent activity. This relates to the general sense of opportunistic or petty crimes that take place where the environment leaves residents vulnerable, whether in common neighbourhood spaces, or residents' very own homes.

ii. Category 6.1.2: Vicarious experiences of real threats of disaster

Not many participants in this study indicated that they have fallen victim to truly adverse natural conditions. However, every single one had a story of a neighbour or someone they knew, who have. This is demonstrated by the following three narratives:

"...I used to hear some people talking, but I never experience that. You...hear them say: Oh...uhm my shack is...is gone! I have to fix it." (Participant 2)

"And the house is too close. So when there's a fire here in this house, it gives it to the other house, and the next." (Participant 10)

"...there are ones that staying in the shacks but they don't have streets. There are one who are squatting there. There is no passage to go. If one shack burn, the others they all burn." (Participant 15)

These threats were very real to people in close proximity to the participants, and besides the physical implications that may have, the fear of such impending disasters may have

participants in a constant state of anxiety and deep-rooted psychological distress (Smit et al., 2016:201; Shortt & Hammett, 2013:621).

b) Sub-theme 6.2: Fear of crime

Fear of crime is a very prominent experience cited by all of the participants in the findings of this study. The following sub-section elucidates this experience as it pertains to environmental injustice, and this can be divided into first-hand experience and the constant and persistent fear of crime experienced by participants.

i. Category 6.2.1: First-hand experience

Every single one of the participants referenced crime as either the biggest, or one of the biggest issues in their environment. Not only do the participants perceive crime to be high in their neighbourhood, but most of them have first-hand experience:

“So, imagine they...uh...recently, they broke my window, they wanted to get inside, of which I was inside, imagine, at two o'clock (in the morning).” (Participant 3).

“...I'm not feeling safe, because the skollies (thugs) maybe take the zinc or they come inside, uh, in the middle of the night, they take everything...” (Participant 1)

Multiple authors have noted that crime is pervasive in low socioeconomic neighbourhoods, and that it is a constant and daily experience for most residents (Smit et al., 2016:201, Brunn & Wilson, 2014:284).

ii. Category 6.2.2: Constant and persistent fear

The impact of persistent fear of crime is manifold, and one of the ways in which residents feel this in their lives, is in how it prevents them from utilising and enjoying what environmental resources are available. One participant shared how the constant fear of crime affects resident who want to access public parks in the community:

“It's quite easy, but I wouldn't go that side to like, to find these people who rob people and stuff...Even I'm...I'm scared of walking there. Even in the middle of the day, for some reason they decide to rob people of their phones, their money. So it's not really a good idea, unless you're, like, leaving your phone, your stuff and going there.” (Participant 6)

Another participant noted:

“...robbers everywhere, like everywhere. When I'm walking my phone has to be somewhere, like, here (gesturing to side of body) under my arms, or in my waist, wherever, just to hide it... But even in those instances, they search, like they look until they find” (Participant 6)

What has been noted by residents have been documented in the literature as well, and it has been found that such a pervasive fear of crime rooted in real threats can lead to severe psychological stress and detrimental economic outcomes due to the restriction of movement (Smit et al., 2016:201; Brunn & Wilson, 2014:284).

This section had delved into the detail of the findings of the study, delineated by the six main themes which presented itself, namely residents' experiences of environmental injustice as it relates to accessing life-sustaining goods and services, psychological needs and social relations, self-actualisation, belonging and spiritual needs, creative and productive processes, and a sense of security. The respective sub-themes and categories associated with each further elucidates the meaning the participants attached to their lived experiences associated with environmental injustice in their daily lives. All of these findings are corroborated or predicted by academic literature across a wide range of disciplines, but the implications for the social functioning and social development of residents in low socioeconomic settlements have not been investigated to the extent of this study.

The following section consists of a critical reflection on the empirical findings, and will review the quality of the research, the limitations of the study, and researcher reflexivity.

4.4 Critical Reflection on Empirical Findings

4.4.1 Assessing the Quality of the Research

The prolific and established qualitative research authors, Lincoln and Guba (1999) established the criteria of credibility, dependability, transferability and conformability to determine the quality and trustworthiness of qualitative research. These criteria are endorsed by De Vos, et al. (2011:419-421), specifically pertaining to social professions research. Guided by them, the researcher has sought to meet these criteria for the study in the following ways:

4.4.1.1 Credibility

Credibility, which measures whether the research process had been followed in order to accurately identify and explore the research topic, has been sought for this study by following

well-documented Social Work research processes, asking participants whether the researcher's understanding of the phenomena is in line with that of the participant (member checks), and by regularly seeking guidance from an academic supervisor (De Vos, et al., 2011:420).

4.4.1.2 Dependability

Dependability concerns itself with the logical and audited process documentation of a study, which should provide a clear account of the researcher's account of fluctuating social conditions (De Vos, et al., 2011:420-421). The research process for this study has been meticulously accounted for in section 2 of this chapter, thus ensuring a sense of dependability. In addition, this section (4) adds a reflection on the research itself, to reflect on how research parameter may have influenced the results.

4.4.1.3 Transferability

The transferability of this study refers to whether its findings can be applied to another context or another set of circumstances (De Vos, et al., 2011:420). Although it is a contentious subject whether qualitative studies should be measured by generalisation, the researcher sought to ensure transferability by grounding the study in a strong theoretical framework, which clearly guided the research process, and thus it can be seen how this study fits into an existing body of theory (De Vos, et al., 2011:420).

4.4.1.4 Confirmability

Confirmability is associated with the quantitative concept of objectivity in research, and can be qualitatively measured by whether a study's findings can be confirmed by others (De Vos, et al., 2011:421). In this study, the researcher had made use of literature control in order to immediately validate research results by existing literature and research within the field.

4.4.2 Limitations of the Study

One limitations of this study was that the entire participant sample had been female, which may not have been as representative of the population of the urban informal settlement, of which only 51.1% of the population are female (Strategic Development Information and GIS Department, 2013:3). Rubin and Babbie (2001:403) reiterate that sampling should draw from a range of views which can be appropriately included in the study, in order to gain rich data.

However, this had been the outcome of recruiting through key community partners, and the residents who were willing to participate in the study, were overwhelmingly female.

4.4.3 Researcher Reflexivity

Researcher reflexivity is a feature which is critical in social science research, and is a concept which recognises the ambiguity of knowledge interpretation within a world of social construction, which the social science researcher aims to explore (D'Cruz, Gillingham & Melendez, 2007:85).

Above and beyond the requirements of critical reflection to produce high quality Social Work research, Clifford and Burke (2009:39) emphasise that the reflexivity of the researcher is an essential component in Social Work research undertaken from an Anti-Oppressive perspective.

In the context of this study and guided by the principles of the Anti-Oppressive perspective, the researcher identifies that her membership to the group of middle-class, white, female, educated and professional South African citizens places her in a position of power in relation to the participants of the study, due to structural norms and the country's historic, economic and political climate. This is a factor of which the researcher had been conscious of throughout the study, and tried to compensate for by drawing on more than two years of experience in working with similar populations (residents of urban informal settlements) in a helping professions context.

However, the researcher would not be as brazen as to assume that this could eradicate deep-rooted structural biases that may have resulted, or that the participants did not feel any effect of these power relations during interviews. This potential impact is thus noted here and considered for its interaction with the results of the study.

4.5 Conclusion

This chapter has detailed an empirical investigation into the experiences of residents of an urban informal settlement regarding environmental injustice, and has done so from the theoretical framework of the Anti-Oppressive approach in Social Work. Section 2 of the chapter has set out the research method and process in detail, whilst the results of the study had been captured in section 3, and presented according to salient themes, sub-themes and

corresponding categories on the personal, cultural and structural levels of Anti-Oppressive analysis respectively.

The findings of the study echoes in part, and is corroborated, by existing literature on the subject of environmental injustice across various academic disciplines. What is novel about these findings, however, is that it brings together previously disconnected findings and theory in a single study, and does so uniquely from a Social Work perspective.

What has surfaced again and again throughout the findings of this study, is that the residents of the informal settlement seem to be well aware of environmental injustice, albeit in an abstract sense, and the influence of it on their lives. This is most pertinently explored in the sense of how residents feel a loss of dignity due to the unequal spaces they live in. The results of the study also unequivocally illustrate the impact of these various environmental injustices on the lives of urban informal settlement residents.

The quality of the study has been evaluated in several ways. Firstly, credibility, dependability, transferability and confirmability in qualitative research had been established by a meticulously documented research process, member checking, auditing findings through existing literature, and seeking regular guidance from a well-established academic supervisor. Secondly, the researcher has set out to note the limitations of the study (4.4.2), as to transparently account for its potential impact on findings. The third and final measure included in assessing the quality of the research, had been a discussion on researcher reflexivity, which declares the possible influence of oppressive power relations prominent in research interactions.

Drawing on the outcomes of this chapter, as well as its antecedents, the following chapter will provide relevant conclusions and recommendations regarding the topic.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

As stated in Chapter 1 of this report, the goal of this study had been to gain an understanding of environmental injustice in a low socioeconomic settlement, to assess possible implications for Social Work policy and practice. Chapters two through four of this report delineates the steps undertaken to gain this understanding, as well as what findings has been gained from it. The purpose of this fifth and final chapter is thus to draw conclusions from the findings and make appropriate recommendations for Social Work policy and practice.

In order to achieve the goal of the study, as stated above, four objectives had been identified for the investigation. These objectives have been consequently fulfilled as follows:

Chapter two of this report fulfils the first objective of the study, which had been to describe the influence of the environment on the social functioning and development of residents of low socioeconomic settlements from an Anti-Oppressive perspective.

Chapter three addressed the nature and scope of environmental injustice in low socioeconomic settlements in cities, fulfilling the second objective of the study.

Chapter four, which delineates the empirical findings of the study, fulfils the third objective of this study, involving the investigation of environmental injustice as experienced by the residents of a low socioeconomic settlement.

Finally, this chapter (five) fulfils the final objective of the study, which is draw conclusions and make appropriate recommendations to address environmental injustice in informal or low socioeconomic settlements. This is set out below in three main sections, according to conclusions and recommendations based on the findings and according to the Anti-Oppressive Perspective, recommendations for further research, and finally, key findings and conclusions of the study as a whole.

5.2 Conclusions and Recommendations

The below section elucidates conclusions and appropriate recommendations based on the findings of the study. These conclusions and recommendations are structured according to the personal-cultural-structural (PCS) model of analysis within the Anti-Oppressive Perspective, because this had been the approach used to structure the findings and analyse results, in addition to the profile of participants.

The conclusions presented below were drawn across all the identified themes from the empirical findings within each level of the PCS model. Similar ideas and core conclusions emerged across the themes, and therefore the below conclusions are presented according to these groups of core inferences on each level.

5.2.1 The Profile of Participants

The ages of the participants reflected census data on the generational trends present in the population of the low socioeconomic settlement which had been the site of the study. The settlement shows a high degree of young people under the age of 35, as opposed to few older people over 65 years of age (Strategic Development Information and GIS Department, 2013:3). This is a departure from what the population profile of the settlement had been for decades, due to the majority of residents migrating from elsewhere to seek employment (Seekings, 2013:1). Informal urban settlements, such as the site of the study, have traditionally been migrant communities, but now the trend indicates that these settlements are becoming permanent, sprouting a young and rapidly growing population as more families begin and children are born there. In addition, the findings also show that several of the participants have lived in the settlement for many years, with an average of 14.75, nearly half of the average age of participants (31 years). This also shows a trend towards longer residence in the settlement.

This resonates with Shortt and Hammett's (2013:617) assertion that there is a lack of recognition of permanency in low socioeconomic settlements in South Africa, and consequently, a lack of basic services and infrastructure to which all South African citizens are entitled. For a long period of time, the South African government had argued that informal settlements are merely temporary, and that the goal is to upgrade all citizens to formal housing. However, the government has come to realise that these settlements are here to

stay, yet have not poured significant resources into planning for and implementing the services and infrastructure necessitated by this circumstance (Brunn & Wilson, 2013:286; Storey, 2012:116; Mels et al., 2009:331). In fact, the government has often used the temporality argument to justify insufficient service delivery and a lack of basic infrastructure to residents of informal/low socioeconomic settlements (Shortt & Hammett's, 2013:617).

Chapter 3 also indicates that the lack of services due to the insufficient recognition of permanency has also affected the social welfare systems in low socioeconomic settlements. Not only is the only Department of Social Development office in the low socioeconomic settlement, which had been the site of the study, overstressed and under-resourced (Cole, 2007:vii), but also only 36 non-profit organisations (across the entire spectrum of social services) exist in the area to serve a population of over 400 000 residents (Strategic Development Information and GIS Department, 2013:3; Department of Social Development's directory of services to children and families in the Western Cape, 2010:46-128).

In the light of this growing sense of permanency, yet with insufficient basic provision to residents, the following recommendations can be made:

- The South African government should create a demonstrably viable plan for providing basic services and infrastructure to all informal/low socioeconomic settlements, as mandated by the Bill of Rights (Republic of South Africa, 1996). Such plans must aim to provide these services and infrastructure in situ to residents of low socioeconomic settlements, and not with the unrealistic goal of migrating residents to formal residential areas.
- The Department of Social Development must extend its reach within low socioeconomic settlements to provide support to residents in mitigating and dealing with the detrimental effects of environmental injustice on their social functioning and social development.
- Non-profit social service organisations must investigate options for providing more services in low socioeconomic settlements, as to support the Department of Social Development's efforts and fulfil social service needs where government services are lacking.

- Both government structures and non-profit organisations must use data and evidence on the nature and scope of environmental injustice in low socioeconomic settlements to inform service provision, planning, and fundraising.

5.2.2 The Personal/Psychological Level

On the personal/psychological level, there are two prominent conclusions, one relating to the nuances of inequality and access, and the other involving the impact of self-concept as affected by environmental injustices. These conclusions are set out below, followed by appropriate recommendations for each:

5.2.2.1 The Nuances of Inequality and Access

The empirical findings on the personal or psychological level of analysis highlighted that environmental (in)equality in low socioeconomic settlements are complexed and nuanced. On paper, 71.7% of residents in the informal settlement which had been the site of the study, have access to flush toilets (Strategic Development Information and GIS Department, 2013:6). What is not reflected in official statistics, however, and which is evident from the findings of this study, is that residents face many barriers to access these toilets, due to insufficient service delivery to shared toilets, and a large number of people having to use the same facilities. The findings also show that although some residents do have access to private flush toilets, these are often in the homes of their landlords, and they are thus dependent on someone else to use this basic facility.

Similarly, accessing clean water is subject to often walking great distances and frequent, long interruptions in provision. In another example, basic housing afforded to all South African citizens under the Constitution requires hidden prerequisites, like owning your own plot of land, which immediately exclude those who need economic support the most.

As noted in Chapter 2, barriers to accessing life-sustaining goods and services can have wide-ranging and profound impacts on the social functioning and development of residents of low socioeconomic settlements. This includes serious impediments to physical health, impaired psychological well-being, and the perpetuation of structural oppression (Rigolon, 2016:161; ; Smith, et al., 2016:200; Parsons et al., 2015:286; Shortt & Hammett, 2013:623; Western Cape Department of Environmental Affairs & Development Planning, 2013:9; Sverdlik, 2011:126; Allender et al., 2008:939).

The empirical findings corroborate this, with participants noting limited access to healthy food options, several barriers to accessing health care and other basic services, unreliable access to basic resources such as water, health problems resulting from the environment, and cycles of poverty due to hidden requisite in accessing constitutionally mandated services.

In the light of these conclusions with regards to the nuances of (in)equality and access to services, the following recommendations can be made:

- Social Work practitioners need to take into account the complex barriers to access which service users, who are residents of low socioeconomic settlements face daily, and how this may prevent normal social functioning and stunt optimal social development. Practitioners need to include these complex considerations in needs assessments of service users living in low socioeconomic settlements.
- Advocacy efforts by both social and environmental justice oriented organisations for environmental justice need to include data on the lived experiences of residents of low socioeconomic settlements, and not only shallow statistics that may not reflect these nuances.
- The private sector and social investors must consider investment in services and research regarding the mitigation and abatement of environmental injustice in low socioeconomic settlements, as evidence demonstrates great inequality with a profound impact on a significant segment of the South African population.

5.2.2.2 The Profound Impact of Self-Concept Affected by Environmental Injustice

The findings of the study indicate that the participants feel that their sense of self is negatively affected by their environment, whether by invasions of their personal spaces, or by the loss of dignity they feel associated with the conditions of informality in their environment. Not only can this have a deep and persisting detrimental impact on a person's self-esteem, but it can also severely impair social cohesion among people and within communities (Shortt & Hammett, 2013:622-624). Participants noted first-hand experience on how their self-concept is negatively affected by their environment, and that they experience negative effects like isolation and hopelessness on a daily basis.

As noted in chapter 2 of this report, there is much research surrounding poor environmental conditions and how it impacts on the formation of self-concept. Although the formation of

positive self-concept is essential to establishing well-being throughout the lifespan (Benninger & Savahl, 2016:1), residents of low socioeconomic settlement often suffer impaired self-concept due to environmental conditions, which often leads to persistent psychological insecurity, stress, and a loss of hope for the future (Benninger & Savahl, 2016:16; Ndlela, 2011:11; Moses, 2006:112).

In addition, the findings shows that there are only 5 social service organisations in total offering mental health services for more than 400 000 residents in the site of the study, of which were mostly focused on trauma interventions (Department of Social Development's directory of services to children and families in the Western Cape, 2010:46-128). The implication of this is that residents have very few resources to draw upon with regards to psychological support relating to impaired self-concept.

With the above conclusion regarding the impact of impaired self-concept in mind, the following recommendations can be made:

- Social service professionals should be mindful that social dysfunction stemming from impaired self-concept cannot be addressed in isolation, and that conditions of environmental injustice should be included in intervention plans.
- The government and non-profit organisations in the mental health sector must extend services to low socioeconomic settlements, offering support regarding the effects of impaired self-concept, and interventions to address it.
- In addition to the above, institutions such as schools and churches in low socioeconomic settlements may look to provide lay counselling and community psychology interventions to assist in bridging the service gap with regards to psychological support services.

5.2.3 The Cultural Level

On the cultural level, one prominent conclusion had been drawn with regards to the social impact of pervasive alienation, which is elaborated on below, including recommendations regarding this conclusion.

5.2.3.1 The Social Impact of Pervasive Alienation

Alienation relating to environmental injustice is a common matter that came up in the findings of this study, especially pertaining to oppression on the cultural level. One way in which this

occurs, is that participants do not feel that the informal settlement where they live is their home. The findings show that residents would often prefer to be back in the areas where they were born, mostly the Eastern Cape, and that they believe life had been much better for them there than it is in the informal settlement. The result of this is an alienation from their surroundings and daily life, with a constant feeling of being ill at ease in their daily environment.

In addition, the findings also show that the natural and physical environment within the low socioeconomic (or informal) settlement do not allow for participants to practice significant cultural practices freely, such as rituals around burial of family members. This contributes to residents' cultural alienation within their living spaces.

The following recommendations can be made in relation to the social impact of pervasive alienation:

- Social service organisations should implement interventions on the meso-level, aimed at strengthening cohesion, and creating connectedness between residents and their environment.
- Churches and/or other religious organisations in low socioeconomic settlements could promote a culture of practicing religious rites and rituals within the environment of low socioeconomic settlement, to what extent this may be possible.
- Social Work practitioners, health care workers, and police officials should familiarise themselves with the impacts of cultural alienation within the communities they serve, as well as how this alienation may affect resident's social functioning, health and social delinquency.

5.2.4 The Structural Level

On the structural level, little recognition of social inequalities among residents and inequalities due to insufficient legal protection were the two salient conclusions drawn from the findings. These conclusions are discussed in the below sub-section, and appropriate recommendations follow for each.

5.2.4.1 Little Recognition of social Inequalities Amongst Residents

A prominent finding on the structural level had been that many residents internalise inequality, whether environmental or otherwise, and accept these conditions as inevitable.

For instance, participants cited that the poor environmental conditions or crime in their neighbourhood is an accepted part of their daily life. Many participants presented an awareness of the environmental inequalities in their lives, such as recognising the great disparity between residents who received free government housing and residents who do not have their own property to receive this service. However, participants have come to accept these disparities as inevitable, everyday occurrences.

Taking this a step further, the findings also show that many of the participants attribute environmental injustices and other inequalities to supernatural causes, such as attributing their position in society to the will of God or citing that the high rates of crime is due to witchcraft.

This acceptance of unjust conditions, or its attribution to supernatural causes, indicate a lack of recognition of social (including environmental) injustice, and its associated human rights violations. In either of these cases, structural and pervasive inequality and oppression (expressed through environmental injustice) are negated and not addressed by residents themselves.

Authors on the subject have identified that continued unjust environmental conditions may lead to a loss of hope for the future, and this may be related to why participants accept and internalise environmental injustice (Shortt & Hammett, 2013:22). This is thus where social service professionals can make an impact in identifying these structural oppression, and implementing interventions to address it.

The following recommendations can be made based on the conclusions relating to the lack of recognition of residents regarding social inequalities:

- The nature, scope and impact of environmental injustice, as it relates to social functioning and social development, should be included in generic Social Work education at undergraduate level.
- Social Work intervention projects on the macro level in low socioeconomic settlements should include awareness campaigns regarding the rights of residents as it pertains to the environment and social justice.

- Similar to the previous recommendation, human rights groups and social justice coalitions can seek to provide education regarding environmental injustice as it relates to human rights within low socioeconomic settlements.

5.2.4.2 Injustices stemming from Insufficient Legal Protection

The findings surrounding the experiences of residents of a low socioeconomic settlement with regards to environmental injustice also revealed that much the detrimental effects of the environment and unjust conditions can be attributed (at least in part) to the insufficient legal status of these residents. As residents of these settlements do not own the land they are living on, and the government continues to see these communities as temporary, very little legal and physical protection is afforded to the residents. With the residents not having formal legal status with regards to their environment, there is also little impetus for the government to ensure that environmental conditions are fair and meeting their needs (Huchzermeyer, 2004:333).

Furthermore, participants prominently noted that crime is rife in their neighbourhood, and that there are very few services and structures in place to protect them from it. As with no formal legal protection of residents' environmental rights, the lack of services to protect residents' safety also leads to constant fear of and vulnerability to crime. This is aggravated by the poor police visibility in the low socioeconomic settlements (Grinshteyn et al., 2016:110), which had also been prominent in the accounts of participants.

With regards to the injustices stemming from insufficient legal protection of residents in low socioeconomic settlements, it is recommended that:

- Social Work professionals invest time and resources in advocating for the rights and legal protection of vulnerable groups, such as residents of low socioeconomic settlements.
- The South African Police Service evaluates service provision to low socioeconomic settlements and increases police visibility within these settlements.
- Human rights lawyers/law firms extend services to residents of low socioeconomic settlements, and consider representing such residents in cases relating to environmental injustice.

5.3 Key Findings and Main Conclusions

As identified from the outset of this study, the field of environmental injustice is a novel topic in the field of Social Work, and even more so in South Africa. This study has broken new ground in consolidating research from various disciplines relating to the subject, and applying this research within the context of a Social Work investigation.

The key finding of this study is that environmental injustice is a tangible and profound reality for the residents of a low socioeconomic settlement in Cape Town, South Africa, and that it has a deep impact on residents' social functioning and social development. Reviewing the impact of the environment on the fulfilment of human needs, the research is clear on the importance of access to adequate environmental resources and protection from environmental dangers. However, the participants of this study have indicated that such access and protection are not available to them and that it detrimentally affects their health, self-esteem, social relations, spiritual belonging, and ability to participate in social and productive processes.

The Anti-Oppressive Perspective in Social Work posits that critical Social Work practice requires constant and critical reflection on how oppression may influence social functioning and social development amongst all humans (Thompson, 2016:42). The exclusion of the existence and effects of environmental injustice in Social Work research and practice will leave researchers and practitioners without a key consideration in critically reflecting on, and consequently addressing, such oppression.

5.4 Further Research

There is much potential with regards to further research on the topics of environmental injustice, how it is experienced by residents of low socioeconomic settlements, and what impact it has on these residents' social functioning and development. This study, with its combination of exploratory and descriptive design, serves as a novel entry in the field of Social Work in South Africa, and is but a first step in better understanding the complex nexus of environment and social development.

As mentioned in a number of the recommendations made in the previous subsection, there is also much potential for further research on various themes that arose from the conclusions,

such as the development of self-concept in relation to the physical environment and longitudinal studies on how sociocultural alienation may impact on social functioning and development.

In the light of the conclusions from this study and with consideration of research in disciplines other than Social Work, it would be insightful to gain an understanding of how the profession in South Africa views the topic of environmental injustices, as well as how it relates to social functioning and social development. It can therefore be recommended that further research efforts are invested in learning how Social Work practitioners understand environmental injustice within the sphere of social development, and to what extent they include considerations of the subject in needs assessment of and interventions with service users.

REFERENCES

- African National Congress, 1994. **The Reconstruction and Development Programme: A Policy Framework**. African National Congress.
- Allender, S., Foster, C., Hutchinson, L. & Arambepola, C. 2008. Quantification of Urbanization in Relation to Chronic Diseases in Developing Countries: A Systematic Review. **Journal of Urban Health**, 85(6). :938-951.
- Almgren, G. 2005. The Ecological Context of Interpersonal Violence: From Culture to Collective Efficacy. **Journal of Interpersonal Violence**, 20(2):218-24.
- Barker, R. 2003. **The Social Work dictionary** (5th ed.). Washington, DC: NASW Press.
- Bartky, S.L. 1990. **Femininity and domination: Studies in the phenomenology of oppression**. Psychology Press.
- Bartlett, S. 1999. Children's Experience of the Physical Environment in Poor Urban Settlements and the Implications for Policy, Planning and Practice. **Environment and Urbanization**, 11(2):63-74.
- Bartlett, S.N. 2002. The problem of children's injuries in low-income countries: a review. **Health policy and planning**, 17(1):1-13.
- Bartlett, S.N. 2008. Climate Change and Urban Children: Impacts and Implications for Adaptation in Low-and Middle-Income Countries. **Environment and Urbanization**, 20(2) :501-519.
- Battersby, J. & Crush, J. 2014. Africa's Urban Food Deserts. **Urban Forum Urban Forum**, 25(2):143-151.
- Beall, J., Crankshaw, O., Parnell, S. 2000. Victims, Villains and Fixers: The Urban Environment and Johannesburg's Poor. **Journal of Southern African Studies**, 26(4):833-855.
- Bekker, S., Eigelaar-Meets, I., Eva, G. and Poole, C. 2008. **Xenophobia and violence in South Africa: a desktop study of the trends and a scan of explanations offered**. University of Stellenbosch.
- Benninger, E. & Savahl, S., 2016. A systematic review of children's construction of the self: implications for children's subjective well-being. **Child Indicators Research**, 2:1-25.
- Berkman D. S., Lescano A.G., Gilman R.H., Lopez S.L., Black M.M. 2002. Effects of Stunting, Diarrhoeal Disease, and Parasitic Infection during Infancy on Cognition in Late Childhood: A Follow-Up Study. **Lancet**, 359(9306):564-71.
- Bolund, P. & Hunhammar, S. 1999. Ecosystem Services in Urban Areas. **Ecological Economics**, 29(2):293-301.

- Bradley, B. 2015. **Well-being (Key concepts in philosophy series)**. Cambridge: Polity Press.
- Brandt-Rauf, P. 2010. Global Environmental Justice Beyond Copenhagen: Footprints, Fairness and the Future of the Planet. **Forum on Public Policy: A Journal of the Oxford Round Table**.
- Brunn, S. D. & Wilson, M. W. 2013. Cape Town's Million Plus Black Township of Khayelitsha: Terrae Incognitae and the Geographies and Cartographies of Silence. **Habitat International**, 39:284-294.
- Bull-Kamanga, L., Diagne, K., Lavell, A., Leon, E., Lerise, F., MacGregor, H., Maskrey, A., Meshack, M., Pelling, M., Reid, H. and Satterthwaite, D. 2003. From everyday hazards to disasters: the accumulation of risk in urban areas. **Environment and Urbanization**, 15(1):193-204.
- Bullock, S. 2001. Polluting the Poor. **The Ecologist**, 31:56.
- Carey, M. 2009. **The Social Work dissertation. Using small-scale qualitative methodology (2nd ed.)**. Berkshire: Open University Press.
- Carruthers, J. 2006. Tracking in Game Trails: Looking afresh at the olitics of environmental history in South Africa. **Environmental History**, 11(4) :804-829.
- Clifford, D. & Burke, B. 2009. **Anti-Oppressive ethics and values in Social Work**. Hampshire: Palgrave Macmillan.
- Coates, J. & Gray, M. 2012. The environment and Social Work: An overview and introduction. **International Journal of Social Welfare**, 21:230-238.
- Cock, J. 2007. **The war against ourselves: Nature, power and justice**. Johannesburg: Wits University Press.
- Cole, J. 2007. **Khayelitsha Chapter 2a and 2b: Livelihood profile of Khayelitsha and situational analysis of DSD services in the node**.
- Collins English Dictionary**. 2000. S.v. 'justice' [Online]. Available: <http://search.credoreference.com.ez.sun.ac.za/content/entry/hcengdict/justice/0?searchId=7847b3c5-c027-11e4-a242-0aea1e24c1ac&result=5> [2015, March 1].
- Collins, T.W. 2013. Mapping Vulnerability to Climate Change-Related Hazards: Children at Risk in a US-Mexico Border Metropolis. **Population and Environment**, 34(3):313-337.
- Costello, A. 2009. Managing the Health Effects of Climate Change: Lancet and University College London Institute for Global Health Commission. **Lancet**, 373(9676):1693-1733.
- Couch, J.F., Halvorson, J., Malone, K. & Williams, P.M. 2003. Of Racism and Rubbish: The Geography of Race and Pollution in Mississippi. **Independent Review**, 8:235-247.

- D'Cruz, H. & Jones, M. 2014. **Social Work research in practice: Ethical and political contexts (2nd ed.)**. London: SAGE Publications Ltd.
- D'Cruz, H., Gillingham, P. & Melendez, S. 2007. Reflexivity, its meanings and relevance for Social Work: A critical review of the literature. **British Journal of Social Work**, 37:73-90.
- Dalrymple, J. & Burke, B. 1995. **Anti-Oppressive practice: Social care and the law**. Buckingham: Open University Press.
- Dalrymple, J. and Burke, B. 2006. **Anti-Oppressive practice: Social care and the law**. London: McGraw-Hill Education (UK).
- De Vos, A. S., Strydom, H., Fouché, C. B. & Delport, C. S. L. 2011. **Research at grass roots: For the social sciences and human service professions (4rd ed.)**. Pretoria: Van Schaik Publishers.
- Democratic Alliance**. 2017. Where we govern [Online]. Available: <https://www.da.org.za/da-governed-municipalities/> [2017, March 1].
- Department of Environmental Affairs and Tourism. 2006. **South Africa environment outlook**. Pretoria: Department of Environmental Affairs and Tourism.
- Department of Social Development. 2010. **Children Services Directory, Western Cape, 2011: A Guide to Provincial Non-Profit Organisations and Government Resources for Vulnerable Children**. Pretoria: USAID.
- Dixon, J. & Ramutsindela, M. 2006. Urban resettlement and environmental justice in Cape Town. **Cities**, 23(2), 129-139.
- Dold, T. & Cocks, M.L. 2012. **Voices of the Forest. Celebrating Nature and Culture in Xhosaland**. Johannesburg: Jacana.
- Dominelli, L. & Campling, J. 2002. **Anti-Oppressive Social Work theory and practice**. Palgrave Macmillan.
- Dominelli, L. 2002. **Anti-Oppressive Social Work theory and practice**. Hampshire: Palgrave Macmillan.
- Dominelli, L. 2013. Environmental justice at the heart of Social Work practice: Greening the profession. **International Journal of Social Welfare**, 22:431-439.
- Dover, M. 2013. Human Needs: Overview. **Encyclopedia of Social Work**. [Online]. Available: <http://socialwork.oxfordre.com/view/10.1093/acrefore/9780199975839.001.0001/acrefore-9780199975839-e-554> [2017, March 2].
- Drivdal, L. 2016. Flooding in Cape Town's informal settlements: Conditions for community leaders to work towards adaptation. **South African Geographical Journal**, 98(1):21.

- Du Toit, A. and Neves, D., 2007. **In Search of South Africa's Second Economy: Chronic Poverty, Economic Marginalisation and Adverse Incorporation in Mt. Frere and Khayelitsha.**
- Ernstson, H. 2013. The Social Production of Ecosystem Services: A Framework for Studying Environmental Justice and Ecological Complexity in Urbanized Landscapes. **Landscape and Urban Planning**, 109(1):7-17.
- Feris, L., 2013. Equality – Finding Space in the Environmental Discourse. **Oñati SocioLegal Series**, 3 (5): 877-892.
- Fig, D. 2007. Technological choices in South Africa: Ecology, Democracy and development, in S. Buhlungu, J. Daniel, R. Southall & J. Luchman (eds.). **State of the nation**. Cape Town: HSRC Press. 226-244.
- Franklin, C.S. & Ballan, M. 2001. Reliability and validity in qualitative research, in B.T. Thyer (ed.). **The handbook of Social Work research methods**. Thousand Oaks, CA: SAGE. 273-293.
- Fritz, J.M. 1999. Searching for Environmental Justice: National Stories, Global Possibilities. **Social Justice**, 26:174.
- Frumkin, H. 2001. Beyond Toxicity: Human Health and the Natural Environment. **American Journal of Preventive Medicine**, 20(3):234-240.
- Gama, A., Mourao, I., Nogueira, H., Padez, C. & Rosado, V. 2011. Perceived Neighbourhood Environments, Obesity and Physical Activity According to Socioeconomic Status: Clearing Up Models of Environmental Injustice among Portuguese Children. **International journal of obesity**, 1:21.
- Germeten, S. 2013. Personal narratives in life history research. **Scandinavian Journal of Educational Research**, 57(6): 612-624.
- Gil, D. 2004. Perspectives on social justice. **Reflections: Narratives of Professional Helping**, 10(4):1-9.
- Gil, D. 2008. Meeting universal human needs as the foundation of individual and social development and of social and global justice: comments upon receipt of the Justice Studies Association's 2008 Noam Chomsky Award. **Contemporary Justice Review**, 11(4):323-330.
- Gini index** (World Bank Estimate). 2016. [Online]. Available: <http://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA> [2016, June 10].
- Gladstone, B. P., Muliylil, J. P., Jaffar, S., Wheeler, J. G., Le Fevre, A., Iturriza-Gomara, M., Gray, J. J., Bose, A., Estes, M. K., Brown, D. W., & Kang, G. 2008. Infant morbidity in an Indian slum birth cohort. **Archives of Disease in Childhood**, 93(6):479-484.

- Gontsana, M. 2013. Khayelitsha parents march for quality education. **GroudUp** [Online]. Available: http://www.groundup.org.za/article/khayelitsha-parents-march-quality-education_1259/[2017, March 15].
- Gough, I. 2015. Climate change and sustainable welfare: the centrality of human needs. **Cambridge Journal of Economics**, 39:1191-1214.
- Graham, M., Ernstson, H.,. 2012. Comanagement at the Fringes: Examining Stakeholder Perspectives at Macassar Dunes, Cape Town, South Africa--at the Intersection of High Biodiversity, Urban Poverty, and Inequality. **Ecology and Society**, 17(3):34-52.
- Gray, K. and Wegner, D.M., 2010. Blaming God for our pain: Human suffering and the divine mind. **Personality and Social Psychology Review**, 14(1):7-16.
- Grinshteyn, E. G., Eisenman, D. P., Cunningham, W. E., Andersen, R., & Ettner S. L. 2016. Individual- and Neighborhood-Level Determinants of Fear of Violent Crime Among Adolescents. **Family & Community Health**. 39(2):103-112.
- Grunebaum, H. and Henry, Y., 2003. Where the mountain meets its shadow: A conversation on memory, identity, and fragmented belonging in present-day South Africa. **Homelands: The Politics of Space and the Poetics of Power**, 267-83.
- Habitat, U.N. 2015. **Habitat III Issue Paper 22 Informal Settlements**. New York, NY: United Nations.
- Haque, R., Mondal, D., Kirkpatrick, B. D., Akther, S., Farr, B. M., Sack, R. B., & Petri Jr., W. A. 2003. Epidemiologic and clinical characteristics of acute diarrhoea with emphasis on *Entamoeba histolytica* infections in pre-school children in an urban slum of Dhaka, Bangladesh. **American Journal of Tropical Medicine and Hygiene**, 69(4):398-405.
- Healy, K. 2005. **Social Work theories in context: Creating frameworks for practice**. New York: Palgrave Macmillan
- Heaney, C.D., Wing, S., Wilson, S. M., Campbell, R. L. & O'Shea, S. 2013. Public Infrastructure Disparities and the Microbiological and Chemical Safety of Drinking and Surface Water Supplies in a Community Bordering a Landfill. **Journal of environmental health**, 75:240-37.
- Henderson, P. and Thomas, D.N., 2013. **Skills in neighbourhood work**. Routledge.
- Heynen, N.C. 2002. **The social processes contributing to urban environmental change: Indianapolis' inner-city urban trees**, 1962-1993.
- Heynen, N.C. 2003. The Scalar Production of Injustice within the Urban Forest. **Antipode**, 35(5):980-998.

- Hobson, K. 2004. Environmental Justice: An Anthropocentric Social Justice Critique of how, Where and Why Environmental Goods and Bads are Distributed. **Environmental Politics**, 13(2):474-481.
- Holstein, A. J. & Gubrium, J. F. 2012. **Varieties of narrative analysis**. Thousand Oaks: SAGE Publications, Inc.
- Housing Development Agency (HDA). 2013. **Informal Settlements in the Western Cape**. Johannesburg: HDA.
- Huchzermeyer, M. 20014. From “contravention of laws” to ‘lack of rights’: Redefining the problem of informal settlements in South Africa. **Habitat International**, 28(3):333-347.
- Human Settlements Directorate. 2014. **City of Cape Town built Environment Performance Plan**. City of Cape Town.
- International Federation of Social Workers (IFSW). 2014. **Global definition of Social Work**. (Online). Available: <http://ifsw.org/policies/definition-of-social-work/> [2016, May 20].
- Jackson, L.E. 2003. The Relationship of Urban Design to Human Health and Condition. **Landscape and Urban Planning**, 64(4):191-200.
- Jarvis, D. 2013. Environmental justice and Social Work: A call to expand the Social Work profession to include environmental justice. **Columbia Social Work Review**, 4:36-45.
- Joffe, H. & Yardley, L. 2004. Content and thematic analysis, in D. Marks & L. Yardley (eds.). **Research methods for clinical and health psychology**.
- Johnson, L., & Yanca, S. 2010. **Social Work practice: A generalist approach** (10th ed.). Boston: Pearson Allyn and Bacon.
- Jones, M. 2011. Glaring inequality in city schools. **Cape Times** [Online]. Available: <http://www.iol.co.za/capetimes/glaring-inequality-in-city-schools-1089207> [2017, March 15].
- Jürgens, U., Donaldson, R., Rule, S., & Bähr, J. 2013. Townships in South African Cities - Literature Review and Research Perspectives. **Habitat International**, 39:256-260.
- Kemp, S. P. 2011. Recentring environment in Social Work practice: Necessity, opportunity, challenge. **British Journal of Social Work**, 41:1198-1210.
- Kjellstrom, T., Butler, A.J., Lucas, R.M. & Bonita, R. 2010. Public Health Impact of Global Heating due to Climate Change: Potential Effects on Chronic Non-Communicable Diseases. **International journal of public health**, 55(2):97-103.
- Krieg, E.J. & Faber, D.R. 2004. Not so Black and White: Environmental justice and cumulative impact assessments. **Environmental Impact Assessment Review**, 24:667-694.

- Kuo, F. E., Sullivan, W. C., Coley, R. L., & Brunson, L. 1998. Fertile Ground for Community: Inner-City Neighborhood Common Spaces. **American Journal of Community Psychology**, 26(6):823-851.
- Kyobutungi, C., Kasiira Ziraba, A., Ezeh, A., & Ye., Y. 2008. The burden of disease profile of residents of Nairobi's slums: Results from a demographic surveillance system. **Population Health Metrics**, 6(1):1-8.
- Labonte, R. & Schrecker, T. 2007. Globalization and Social Determinants of Health: The Role of the Global Marketplace (Part 2 of 3). **Globalization and Health**, 3:6.
- Laird, S. 2008. **Anti-Oppressive Social Work: A guide for developing cultural competence**. London: Sage.
- Lee, T. R. 1973. Psychology and living space, in R. M. Downs and D. Stea (eds.). **Image and Environment. Cognitive Mapping and Spatial Behaviour**. London: Edward Arnold. 87-108.
- Lemanski, C. 2007. Global cities in the South: Deepening social and spatial polarisation in Cape Town. **Cities**, 24(6):448-461.
- Lincoln, Y.S. & Guba, E.G. 1999. Establishing trustworthiness. In A. Bryman & R. G. Burgess (eds.), **Qualitative Research Vol III**. London: SAGE.
- Low, N. & Gleeson, B. 1998. **Justice, society and nature: An exploration of political ecology**. London: Routledge.
- Marlow, C. & Van Rooyen, C. 2001. How green is the environment in Social Work? **International Social Work**, 44(2):241-254.
- Marlow, C. R. 2005. **Research methods for generalist Social Work**. New York: Brooks/ Cole.
- McConnell, C. 2009. Migration and xenophobia in South Africa. **Conflict trends**, 2009(1):34-40.
- McDonald, D.A. **World city syndrome: Neoliberalism and inequalities in Cape Town**. 2008. New York, NY: Routledge.
- Mels, A., Castellano, D., Braadbaart, O., Veenstra, S., Dijkstra, I., Meulman, B., Singels, A., Wilsenach, J.A. 2009. Sanitation Services for the Informal Settlements of Cape Town, South Africa. **Desalination**, 248(1-3):330-337.
- Miah, M. 2013. Social Development. **Encyclopedia of Social Work**. [Online]. Available: <http://socialwork.oxfordre.com/view/10.1093/acrefore/9780199975839.001.0001/acrefore-9780199975839-e-362> [2017, March 1].
- Milbourne, P. 2012. Everyday (in)justices and ordinary environmentalisms: Community gardening in disadvantaged urban neighbourhoods. **Local environment**, 17(9):943-957.

- Morenoff, J.D., Sampson, R. J., & Raudenbush, S. W. 2001. Neighborhood Inequality, Collective Efficacy, and the Spatial Dynamics of Urban Violence*. **Criminology**, 39(3):517-558.
- Morris, T.2006. **Social Work research methods: Four alternative paradigms**. London: SAGE.
- Moses, S. 2006. The Impact of Neighbourhood-Level Factors on Children's Everyday Lives, Well-being and Identity: A Qualitative Study of Children Living in Ocean View, Cape Town. **Social Dynamics**, 32(1):102-134.
- Mouton, J. 2013. **How to succeed in your master's and doctoral studies. A South African guide and resource book**. Pretoria: Van Schaik Publishers.
- Ndegwa, D., Horner, D., & Esau, F. 2007. The Links between Migration, Poverty and Health: Evidence from Khayelitsha and Mitchell's Plain. **Social Indicators Research**, 81(2):223-234.
- Ndikumana, L. 2015. Integrated Yet Marginalized: Implications of Globalization for African Development. **African Studies Review**, 58(02):7-28.
- Neuman, W.L. 2000. **Social research methods: Qualitative and quantitative approaches (4th ed.)**. Boston: Allyn & Bacon.
- Nleya, N. 2011. Linking service delivery and protest in South Africa: an exploration of evidence from Khayelitsha. **Africanus**, 41(1):3-13
- O'Regan, K. and Pikoli, V. 2014. **Towards a safer Khayelitsha: report of the Commission of Inquiry into Allegations of Police Inefficiency and a Breakdown in Relations between SAPS and the Community of Khayelitsha**. Summary, August.
- Papreen, N., Sharma, A., Sabin, K., Begum, L., Ahsan, S.K. & Baqui, A.H. 2000. Living with infertility: experiences among urban slum populations in Bangladesh. **Reproductive health matters**, 8(15):33-44.
- Parsons, A.A., Besenyi, G.M., Kaczynski, A.T., Stanis, S.A.W., Blake, C.E. & Barr-Anderson, D. 2015. Investigating Issues of Environmental Injustice in Neighborhoods Surrounding Parks. **Journal of Leisure Research**, 47:285-303.
- Patel, Z. 2009. Environmental justice in South Africa: Tools and trade-offs. **Social Dynamics: A Journal of African Studies**, 35(1): 94-110.
- Patel, Z. 2009. Environmental Justice in South Africa: Tools and Trade-Offs. **Social dynamics**, 35(1):94-110.
- Patton, M.Q. 2002. **Qualitative research and evaluation methods (3rd ed.)**. Thousand Oaks, CA: SAGE.
- Payne, M. 2005. **Modern Social Work theory (3rd ed.)**. Hampshire: Palgrave Macmillan.

- Peden, M., Scurfield, R., Sleet, D., Mohan, D., Hyder, A. A., Jarawan, E., & Mathers, C. 2004. **World report on road traffic injury prevention**. Geneva: World Health Organisation.
- Persaud, N. 2010. Pilot study, in N. J. Salkind (ed.). **Encyclopedia of research design**. Thousand Oaks: SAGE Publications, Inc.
- Pham, T., Apparicio, P., Séguin, A., Landry, S., Gagnon, M. 2012. Spatial Distribution of Vegetation in Montreal: An Uneven Distribution or Environmental Inequity? **Landscape and Urban Planning**, 107(3):214-224.
- Pick, W.M., Ross, M.H., & Dada, Y. 2002. The reproductive and occupational health of women street vendors in Johannesburg, South Africa. **Social science & medicine**, 54(2):193-204.
- Reis, J.N., Palma, T., Ribeiro, G.S., Pinheiro, R.M., Ribeiro, C.T., Cordeiro, S.M., da Silva Filho, H.P., Moschioni, M., Thompson, T.A., Spratt, B. and Riley, L.W. 2008. Transmission of *Streptococcus pneumoniae* in an urban slum community. **Journal of Infection**, 57(3):204-213.
- Republic of South Africa. 1950. **Group areas act no. 41 of 1950**. Pretoria: Government Printer.
- Research Ethics Committee: Human Research (Humanities). 2011. **Standard operating procedure**. Stellenbosch: Stellenbosch University.
- Richardson, E., Pearce, J., Mitchell, R., Day, P., & Kingham, S. 2010. The Association between Green Space and Cause-Specific Mortality in Urban New Zealand: An Ecological Analysis of Green Space Utility. **BMC public health**, 10:73-83.
- Riessman, C. K. 2001a. Analysis of personal narratives, in J. F. Gubrium & J. A. Holstein (eds.). **Handbook of interview research**. Thousand Oaks: SAGE Publications, Inc. 695-711.
- Riessman, C. K. 2001b. Personal troubles as social issues: A narrative of infertility in context, in I. Shaw & N. Gould (eds.). **Qualitative research in Social Work**. London: SAGE Publications Ltd.
- Riessman, C. K. & Quinney, L. 2005. Narrative in Social Work: A critical review. **Qualitative Social Work**, 4(4): 391-412.
- Rigolon A. 2016. A Complex Landscape of Inequity in Access to Urban Parks: A Literature Review. **Landscape and Urban Planning**, 153:160-169.
- Rogge, M.E. 2008. 'Environmental justice', in **Encyclopedia of Social Work**. Available: <http://socialwork.oxfordre.com.ez.sun.ac.za/view/10.1093/acrefore/9780199975839.001.0001/acrefore-9780199975839-e-132?rkey=d47UwN&result=1> [2015, March 1].
- Rowe, W. 2011. Client-centred theory: The enduring principles of a person-centred approach, in F.J. Turner (ed). **Social Work treatment: Interlocking theoretical approaches** (5th ed). Oxford: Oxford University Press, 58-76.

- Rubin, A. & Babbie, E. 2001. **Research Methods for Social Work (4th ed.)**. Belmont, CA: Wadsworth.
- Satterthwaite, D. 2007. **The transition to a predominantly urban world and its underpinnings**. *Unpublished*.
- Satterthwaite, D., 1996. **The Environment for Children: Understanding and acting on the environmental hazards that threaten children and their parents**. Earthscan.
- Schoolman, E.D. & Ma, C. 2012. Migration, Class and Environmental Inequality: Exposure to Pollution in China's Jiangsu Province. **Ecological Economics**, 75:140-151.
- Scioli-Salter, E, Forman, D. E., Otis, J. D., Tun, C., Allsup, K., Marx, C. E., Hauger, R. L., Shipherd, J. C., Higgins, D. M., Tyzik, A. 2016. Potential Neurobiological Benefits of Exercise in Chronic Pain and Posttraumatic Stress Disorder: Pilot Study. **Journal of rehabilitation research and development**, 53(1):95-95.
- Scott, D. & Oelofse, C. 2005. Social and Environmental Justice in South African Cities: Including 'Invisible Stakeholders' in Environmental Assessment Procedures. **Journal of Environmental Planning and Management**, 48(3):445-467.
- Seekings, J. 2013. **Economy, society and municipal services in Khayelitsha. Report for the Commission of Inquiry into Allegations of Police Inefficiency in Khayelitsha and a breakdown in relations between the community and the police in Khayelitsha**. Cape Town: Centre for Social Science Research, University of Cape Town.
- Shortt, N.K. and Hammett, D., 2013. Housing and health in an informal settlement upgrade in Cape Town, South Africa. **Journal of housing and the built environment**, 28(4):615-627.
- Silal, S.P., Penn-Kekana, L., Harris, B., Birch, S. & McIntyre, D. 2012. Exploring Inequalities in Access to and use of Maternal Health Services in South Africa. **BMC Health Services Research**, 12:120.
- Singer, M. 2013. Respiratory Health and Ecosyndemics in a Time of Global Warming. **Health Sociology Review**, 22(1):98-111.
- Smit W, Lannoy A, Dover RV, Lambert EV, Levitt, N., & Watson, V. 2016. Making Unhealthy Places: The Built Environment and Non-Communicable Diseases in Khayelitsha, Cape Town. **Health & place**, 39:196-203.
- South African Council for Social Service Professions (SACSSP). 2006. **Policy guidelines for course of conduct, code of ethics, and rules for Social Workers**. [Online]. Available: <http://www.sacssp.co.za/website/wp-content/uploads/2012/06/Code-of-Ethics.pdf> [2013, September 13].
- Spaull, N., 2013. Poverty & privilege: Primary school inequality in South Africa. **International Journal of Educational Development**, 33(5):436-447.

- Squire, C., Andrews, M. & Tamboukou, M. 2008. **Doing narrative research**. London: SAGE Publications, Ltd.
- Statistics South Africa. 2014. **General Household Survey 2013**. Pretoria: Statistics South Africa.
- Steady, F.C. 2009. **Environmental justice in the new millennium: Global perspectives on race, ethnicity, and human rights**. New York: Palgrave Macmillan
- Stephens, C. 2012. Urban Inequities; Urban Rights: A Conceptual Analysis and Review of Impacts on Children, and Policies to Address them. **Journal of Urban Health**, 89(3):464-85.
- Storey, D. 2012. Incompatible Partners? Urban Poor Communities and River Systems in Bangkok, Thailand. **International Development Planning Review**, 34:109-128.
- Strategic Development Information and GIS Department. 2013. **City of Cape Town - 2011 Census Suburb Khayelitsha**. Cape Town: Statistics South Africa.
- Strydom, H. 2013. An evaluation of the purposes of research in Social Work. **Social Work/Maatskaplike Werk**, 49(2): 149-164.
- Stull, V., Bell, M. M., & Ncwadi, M. 2016. Environmental Apartheid: Eco-Health and Rural Marginalization in South Africa. **Journal of Rural Studies**, (3).
- Sverdlik, A. 2011. Ill-Health and Poverty: A Literature Review on Health in Informal Settlements. **Environment and Urbanization**, 23(1):123-155.
- The Penguin English Dictionary**. 2007. S.v. 'environment'. [Online]. Available: <http://ez.sun.ac.za/login?url=http://search.credoreference.com.ez.sun.ac.za/content/entry/penguin-eng/environment/0> [2015, March 1].
- Thompson, N., 2016. **Anti-discriminatory practice: Equality, diversity and social justice** (6th ed). Palgrave Macmillan.
- Tonkiss, F. 2013. **Cities by design: The social life of urban form**. Cambridge, UK: Polity Press.
- UN-HABITAT. 2015. **Housing and slum upgrading**. [Online]. Available: <https://www.unhabitat.org/urban-themes/housing-slum-upgrading/> [2016, July 20].
- Uprichard, E. 2011. Narratives of the future: Complexity, time and temporality, in M. Williams and W. P. Vogt (eds.). **The SAGE handbook of innovation in social research methods**. London: SAGE Publications Ltd. 103-119.
- Van Dyk, A.C., 2001. Traditional African beliefs and customs: Implications for AIDS education and prevention in Africa. **South African Journal of Psychology**, 31(2):60-66.
- Warren, R.L., 1963. **The community in America**. Chicago: Rand McNally.

- Wells, N.M. 2000. At Home with Nature: Effects of "Greenness" on Children's Cognitive Functioning. **Environment & Behavior**, 32(6):775-795.
- Westaway, M.S. 2006. A longitudinal investigation of satisfaction with personal and environmental quality of life in an informal South African housing settlement, Doornkop, Soweto. **Habitat International**, 30:175-189.
- Western Cape Department of Community Safety. 2013. **Police Must Explain Disastrous Police-to-Population Ratios.** [Online]. Available: <https://www.westerncape.gov.za/news/police-must-explain-disastrous-police-population-ratios> [2017, Jan 16].
- Western Cape Department of Environmental Affairs & Development Planning. 2013. **State of the Environmental Outlook Report for the Western Cape Province.** Cape Town: Western Cape Government.
- Wilbanks, T.J., Romero Lankao, P., Bao, M., Berkhout, F., Cairncross, S., Ceron, J.P., Kapshe, M., Muir-Wood, R. and Zapata-Marti, R. 2007. Industry, settlement and society. **Climate change**, 357-390.
- Wilkinson, P. 2000. City profile: Cape Town. **Cities**, 17(3):195-205.
- Wilson M. G., Ellison G. M., & Cable N.T. 2016. Basic Science Behind the Cardiovascular Benefits of Exercise. **British journal of sports medicine**, 50(2):93-9.
- World Bank. 2007. **Healthy development: The World Bank strategy for health, nutrition, & population results.** Washington, DC, World Bank.
- Wright Mills, C. 2000. **The Sociological Imagination (2nd ed.).** New York: Oxford University Press.
- Wright, C. Y., Oosthuizen, R., John, J., Garland, R. M., Albers, P., & Pauw, C. 2011. Air Quality and Human Health among a Low Income Community in the Highveld Priority Area. **Clean Air Journal/ Tydskrif vir Skoon Lug**, 20(1):12-20.
- Yabonga: Children, HIV and AIDS. 2015. **Annual report 2014.** Wynberg: Yabonga: Childre, HIV and AIDS.

APPENDIX 1: Institutional Permission



23 October 2015

Institutional Permission for research project

I, Emily Rudolph, general manager of Yabonga Children's Project (NPO: 028/267), hereby give permission for the researcher, Izelle du Pisanie (Stellenbosch University masters student – 16501780), to engage staff members of the organisation in gaining access to the communities we service.

A copy of the research proposal has been provided to Yabonga and the needs clearly set out. No clients of the organisation will be included in the study and the researcher is aware of that. Staff members will be engaged on a voluntary basis and only if such engagement does not interfere with work duties.

I can be contacted at 021 761 2940 should there be any further queries.


Emily Rudolph
General Manager

2 Main Road, Wynberg, 7800, South Africa
Private Bag X1, Mowbray 7705
Tel: + 27 21 761 2940 | Fax: +27 21 761 3407
E-mail: info@yabonga.com | www.yabonga.com

Nedbank | Branch Code: 145 209 | Account No.: 1452 012 563
Registration No.: 2000/008830/08 | NPO No.: 028/267

APPENDIX 2: Ethical Clearance



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Approval Notice

Stipulated documents/requirements

05-Jan-2016

Du Pisanie, Izelle IA

Proposal #: SU-HSD-001705

Title: A Social Work investigation into environmental injustice in an African township: The experiences of residents.

Dear Miss Izelle Du Pisanie,

Your Stipulated documents/requirements received on 07-Dec-2015, was reviewed and **accepted**.

Please note the following information about your approved research proposal:

Proposal Approval Period: 19-Nov-2015

General comments:

Please take note of the general Investigator Responsibilities attached to this letter.

If the research deviates significantly from the undertaking that was made in the original application for research ethics clearance to the REC and/or alters the risk/benefit profile of the study, the researcher must undertake to notify the REC of these changes.

Please remember to use your **proposal number (SU-HSD-001705)** on any documents or correspondence with the REC concerning your research proposal.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki and the Guidelines for Ethical Research: Principles Structures and Processes 2015 (Department of Health). Annually a number of projects may be selected randomly for an external audit.

National Health Research Ethics Committee (NHREC) registration number REC-050411-032.

We wish you the best as you conduct your research.

If you have any questions or need further help, please contact the REC office at 218089183.

Sincerely,

Clarissa Graham

REC Coordinator

Research Ethics Committee: Human Research (Humanities)

APPENDIX 3: Semi-Structured Interview Schedule

Stellenbosch University

Department of Social Work

Semi-structured Interview Schedule

A Social Work investigation into environmental injustice in informal settlements: The experiences of residents

Researcher: Izelle du Pisanie

Please note:

- All the information recorded in the questionnaire will be regarded as strictly confidential.
- The names of participants will not be made known.

1. Profile of participant:

- 1.1. How old are you?
- 1.2. What is your gender?
- 1.3. What is your highest level of education?
- 1.4. What is your occupation?
- 1.5. How long have you been living in this neighbourhood?

2. The influence of the environment on the Personal/Psychological Level:

2.1. Access to Life-sustaining Goods and Services, or Material Needs

2.1.1. Nutrition, water and sanitation

- 2.1.1.1. Describe where you buy your food from.
- 2.1.1.2. How-possible is it to get healthy and affordable foods?
- 2.1.1.3. How do you get water in your home?
- 2.1.1.4. How does the water provision to your home meet all of your daily needs?
- 2.1.1.5. What kind of sanitation services do you have access to?

2.1.2. Protective Housing

- 2.1.2.1. What kind of housing do you live in?
- 2.1.2.2. What is it like living there?

2.1.3. A non-hazardous living and working environment

- 2.1.3.1. Describe the natural environment where you live?
- 2.1.3.2. What kind of public parks and common spaces do you have access to?

2.1.4. Health Care

- 2.1.4.1. What is the health care services like that you have access to? (Such as clinics, doctors, hospitals)
- 2.1.4.2. How do you access these services?
- 2.1.4.3. What are the cost of health care services to you (including expenses of medical treatment, transport, time off from work)?

2.1.5. Climate

- 2.1.5.1. How does weather conditions affect your daily life?
- 2.1.5.2. How do you experience adverse natural conditions where you live? (Such as flooding, destructive winds)

2.2. Psychological Needs and Social Relations

- 2.2.1. Who is living in your home?
- 2.2.2. How does your physical environment influence your psychological well-being?
- 2.2.3. Describe where you socialise with other people in your community.

2.3. Self-actualisation

- 2.3.1. How does the environment where you are staying influence your sense of identity?

3. The Cultural Level:

3.1. Belonging and Spiritual Needs

- 3.1.1. How is it to live in this neighbourhood and community?
- 3.1.2. How does your physical environment influence cultural practices that are important to you?

4. The Structural Level:

4.1. Participation in Productive or Creative Processes

- 4.1.1. How do you commute on a daily basis?
- 4.1.2. How does your commuting influence your life?

4.2. A Sense of Security

- 4.2.1. How is the crime in your neighbourhood?
- 4.2.2. How safe is it to move around in the streets and common spaces of your neighbourhood?
- 4.2.3. How do the conditions in your neighbourhood influence violence between people?

Thank you.

APPENDIX 4: Informed Consent Form



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STELLENBOSCH UNIVERSITY

CONSENT TO PARTICIPATE IN RESEARCH

A Social Work investigation into environmental injustice in an African township: The experiences of residents.

You are asked to participate in a research study conducted by Izelle du Pisanie, a masters student from the Social Work Department at Stellenbosch University. The results of this study will become part of a research report. You were selected as a possible participant in this study because you are an adult resident of an African township in Cape Town, and can communicate in English.

1. PURPOSE OF THE STUDY

To gain an understanding of environmental injustice in an African township as experienced by residents, in order to understand the consequences thereof for their overall functioning.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

A semi-structured interview schedule will be utilised to gather information confidentially. You need not indicate your name or any particulars on the interview schedule. The schedule will be completed during an interview conducted by a student-researcher.

You will be asked to do one interview only, which should last about an hour. If you agree, the student-researcher may contact you after all information has been collected and interpreted, to ask whether you think the results and or conclusions are accurate or representative. Whether you agree to check the results or not, the research report will be available to you after completion, should you wish to view it.

3. POTENTIAL RISKS AND DISCOMFORTS

Any uncertainties on any of the aspects of the schedule you may experience during the interview can be discussed and clarified at any time.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The results of this study will inform welfare organisations on the influence of environmental injustice on overall human functioning. This information could be used by welfare organisations for further planning of service delivery.

5. PAYMENT FOR PARTICIPATION

No payment in any form will be received for participating in this study.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of coding where each questionnaire is numbered. All questionnaires will be managed, analysed and processed by the researcher and will be kept in a safe place.

For purposes of data analysis, this interview will be audiotaped for transcription. You have the right to review this tape, and the only other persons who will have access to this tape is the student-researcher and the project supervisor. As soon as the recording is transcribed for data analysis, the audiotapes and transcription will be located in a cabinet in a safe place.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so, for example, should you influence other participants in the completion of their interviews.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

The investigator: Izelle du Pisanie – Cell: 084 818 4730 – Email: izelledupisanie@gmail.com

The research supervisor: Sulina Green, Department of Social Work, University of Stellenbosch.

Tel. 021-808-2070

E-Mail: sgreen@sun.ac.za

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE
--

The information above was described to me by Izelle du Pisanie in English and I am in command of this language or it was satisfactorily translated to me. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent voluntarily to participate in this study.

Name of Participant

Signature of Participant

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in English and no translator was used.

Signature of Investigator